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Drinking Water Surveillance Program

GRIMSBY WATER TREATMENT PLANT

Annual Report 1989



**Environment
Environnement**

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**GRIMSBY
WATER TREATMENT PLANT**

DRINKING WATER SURVEILLANCE PROGRAM

ANNUAL REPORT 1989

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EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM

GRIMSBY WATER TREATMENT PLANT 1989 ANNUAL REPORT

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. In 1989, 65 plants were being monitored.

The Grimsby Water Treatment Plant is a conventional treatment plant which treats water from Lake Ontario. The process consists of coagulation, flocculation, sedimentation, filtration and disinfection. Powdered activated carbon is added when necessary in the summer months to control taste and odour. This plant has a design capacity of $19 \times 1000 \text{ m}^3/\text{day}$ and serves a population of approximately 15,000.

Water samples of the raw and treated water from the plant and one site in the distribution system were taken on a monthly basis and analyzed for the presence of approximately 180 parameters. Parameters were divided into the following groups: Bacteriological, Inorganic and Physical (Laboratory Chemistry, Field Chemistry and Metals) and Organics (Chloroaromatics, Chlorophenols, Pesticides and PCB, Phenolics, Polyaromatic Hydrocarbons, Specific Pesticides and Volatiles). Specific Pesticides and Chlorophenols were analyzed in June and November only.

A summary of results is shown in Table A.

Inorganic and Physical parameters (Laboratory Chemistry, Field Chemistry and Metals) were below applicable health related ODWOs.

Samples were analyzed monthly for the presence of approximately 110 Organics. Levels did not exceed health related guidelines.

During 1989, the DWSP sampling results indicated that the Grimsby Water Treatment Plant produced good quality water at the plant and this quality was maintained in the distribution system.

TABLE A

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP

SUMMARY TABLE BY SCAN

| SCAN | RAW | | TREATED | | SITE 1 | | | | |
|---------------------|-------|----------|---------|----------|--------|----------|-----|-----|----|
| | TESTS | POSITIVE | TESTS | POSITIVE | TESTS | POSITIVE | | | |
| BACTERIOLOGICAL | 29 | 25 | 86 | 33 | 5 | 15 | 36 | 8 | 22 |
| CHEMISTRY (FLD) | 34 | 33 | 97 | 68 | 67 | 98 | 110 | 94 | 85 |
| CHEMISTRY (LAB) | 252 | 216 | 85 | 251 | 181 | 72 | 443 | 363 | 81 |
| METALS | 288 | 180 | 62 | 288 | 148 | 51 | 564 | 327 | 57 |
| CHLOROAROMATICS | 168 | 0 | 0 | 154 | 0 | 0 | 154 | 0 | 0 |
| CHLOROPHENOLS | 6 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 |
| PAH | 191 | 0 | 0 | 191 | 0 | 0 | 0 | 0 | 0 |
| PESTICIDES & PCB | 408 | 0 | 0 | 387 | 0 | 0 | 309 | 0 | 0 |
| PHENOLICS | 11 | 8 | 72 | 12 | 8 | 66 | 0 | 0 | 0 |
| SPECIFIC PESTICIDES | 39 | 0 | 0 | 38 | 0 | 0 | 11 | 0 | 0 |
| VOLATILES | 348 | 0 | 0 | 319 | 44 | 13 | 348 | 48 | 13 |
| TOTAL | 1774 | 462 | 1747 | 453 | 1975 | 840 | | | |

NO KNOWN HEALTH-RELATED GUIDELINES WERE EXCEEDED

A POSITIVE VALUE DENOTES THAT THE RESULT IS GREATER THAN THE STATISTICAL LIMIT OF DETECTION AND IS QUANTIFIABLE
 A "0" INDICATES THAT NO SAMPLE WAS TAKEN

DRINKING WATER SURVEILLANCE PROGRAM

GRIMSBY WATER TREATMENT PLANT 1989 ANNUAL REPORT

INTRODUCTION

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. In 1989, 65 plants were being monitored.

The DWSP was initiated in the Grimsby distribution system in February, 1987. Sampling, at the water treatment plant began in April, 1987. Annual reports were published for 1987 and 1988 (ISSN 0840-5174).

This report contains information and results for 1989.

In order to accommodate the increasing number of plants on the DWSP and to facilitate the timely completion of the 1989 annual reports, plants with two or more years of published data will receive an abbreviated annual report. This report maintains the same general format as in previous years but does not include a comprehensive discussion of results. For more detail on the parameters analyzed and discussion of results, consult the 1987 and 1988 reports.

PLANT DESCRIPTION

The Grimsby Water Treatment Plant is a conventional treatment plant which treats water from Lake Ontario. The process consists of coagulation, flocculation, sedimentation, filtration and disinfection. Powdered activated carbon was added, when necessary, in the summer months, to control taste and odour. When demand is high in the summer months a second intake is used along with three pressure filters. This plant has a rated capacity of $19 \times 1000 \text{ m}^3/\text{day}$ and flows on day of sampling ranging from $6.8 \times 1000 \text{ m}^3/\text{day}$ to $16.2 \times 1000 \text{ m}^3/\text{day}$. The plant serves a population of approximately 15,000.

The plant location is shown in Figure 1. Plant process details, in a block schematic, are shown in Figure 2. General plant information is presented in Table 2.

SAMPLING AND ANALYSIS

Plant operating personnel perform analyses on parameters for process control (Table 1).

Water at the Grimsby Water Treatment plant was sampled for the presence of approximately 180 parameters monthly in 1989. Specific Pesticides and Chlorophenols scans were sampled in June and November only.

FIGURE 1

DRINKING WATER SURVEILLANCE PROGRAM

SITE LOCATION MAP

GRIMSBY WATER TREATMENT PLANT

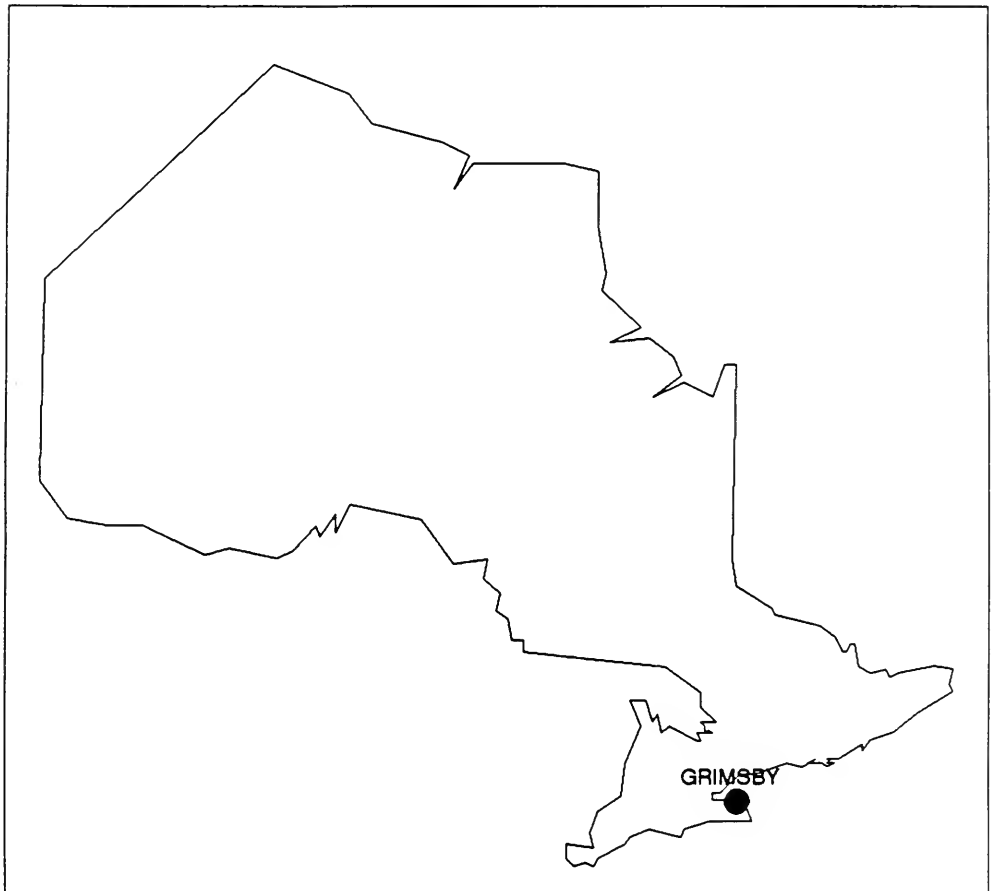
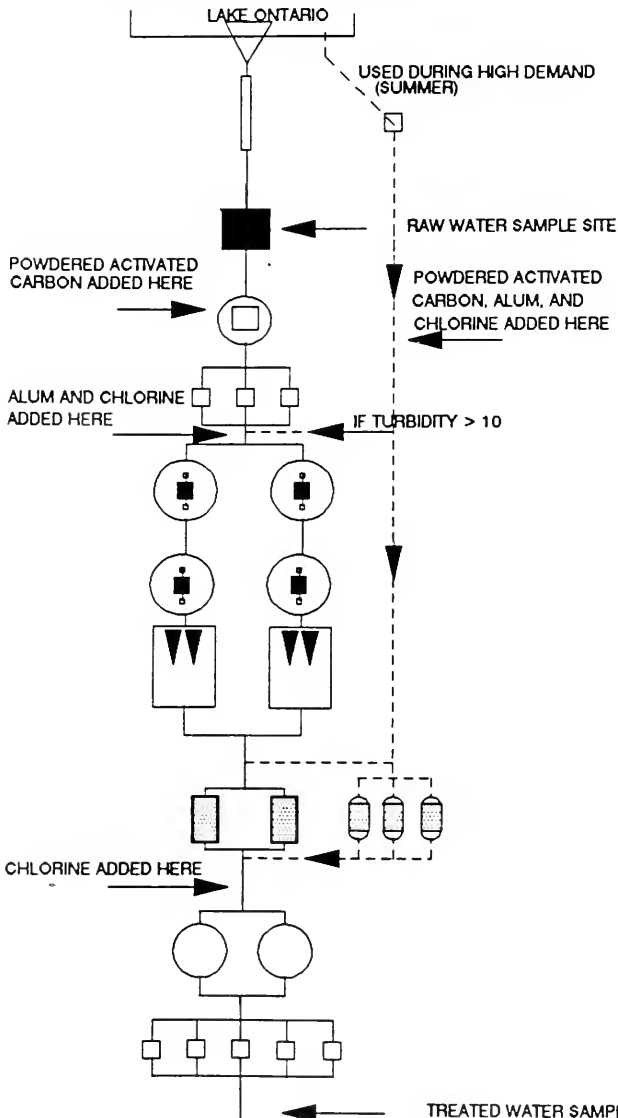


FIGURE 2

GRIMSBY WTP

SCHEMATIC DIAGRAM



CHARACTERISTICS

- 1 INTAKE PIPE
- 1 SCREEN CHAMBER
- 1 SURGE WELL
- 3 LOWLIFT PUMPS
- 4 FLOCCULATION TANKS
- 2 SEDIMENTATION TANKS
- 2 GRAVITY FILTERS
- 3 PRESSURE FILTERS
- 2 CLEAR WELLS
- 5 HIGHLIFT PUMPS

TABLE 1

DRINKING WATER SURVEILLANCE PROGRAM ANNUAL REPORTIN-PLANT MONITORING GRIMSBY WTP 1989

| <u>PARAMETER</u> | <u>LOCATION</u> | <u>FREQUENCY</u> |
|------------------------|--------------------|------------------|
| Chlorine residual-free | Settled water | every 4 hrs |
| | Filtered water | every 4 hrs |
| | Clearwell | every 4 hrs |
| total | Clearwell | every 4 hrs |
| Temperature | Raw water | daily |
| Turbidity | Highlift discharge | every 4 hrs |

TABLE 2

DRINKING WATER SURVEILLANCE PROGRAM ANNUAL REPORT

GENERAL INFORMATION

GRIMSBY WATER TREATMENT PLANT

| | |
|------------------------------|---|
| <u>LOCATION:</u> | ELIZABETH STREET GRIMSBY, ONTARIO FONTHILL ONTARIO L0S 1E0 |
| <u>SOURCE:</u> | RAW WATER SOURCE - LAKE ONTARIO |
| <u>RATED CAPACITY:</u> | 19 (1000 M3/DAY) |
| <u>OPERATION:</u> | MUNICIPAL |
| <u>PLANT SUPERINTENDENT:</u> | A. FORBES |
| <u>MINISTRY REGION:</u> | WEST CENTRAL |
| <u>DISTRICT OFFICER:</u> | MR. J. R. MAYES |

| | |
|--------------------------------|-------------------|
| <u>MUNICIPALITY SERVED</u> | <u>POPULATION</u> |
| GRIMSBY | 15,000 |

Polyaromatic Hydrocarbons and Phenolics are only analyzed in the raw and treated water at the plant. As of August 1989, the analysis of Triazine pesticides was dropped from the distribution sample. Laboratory analysis was conducted at the Ministry of the Environment facilities in Rexdale, Ontario.

RESULTS

Field Chemistry measurements were recorded on the day of sampling and were entered on the DWSP database as submitted by plant personnel.

Table 3 contains information on the sample day retention time, flow rate and treatment chemicals used and their associated dosages.

Table 4 is a summary break-down of the number of water samples analyzed by parameter and by water type. The number of times that a positive or trace result was detected is also reported.

Positive denotes that the result is greater than the statistical limit of detection established by the Ministry of the Environment (MOE) laboratory staff and is quantifiable. Trace (<T) denotes that the level measured is greater than the lowest value detectable by the method but lies so close to the detection limit that it cannot be confidently quantified.

Table 5 presents the results for parameters detected on at least one occasion.

Table 6 lists all parameters analyzed in the DWSP.

Associated guidelines and detection limits are also supplied on tables 5 and 6. Parameters are listed alphabetically within each scan.

DISCUSSION

General

Water quality is judged by comparison with the Ontario Drinking Water Objectives (ODWOs) as defined in the 1984 publication (ISBN 0-7743-8985-0). The Province of Ontario has health related and aesthetic objectives for 49 parameters. These are currently under review. When an ODWO is not available, guidelines/limits from other agencies are consulted. The Parameter Listing System (PALIS), recently published by the MOE (ISBN 0-7729-4461-X), catalogues and keeps current over 1750 guidelines for 650 parameters from agencies throughout the world.

Many of the compounds detected are naturally occurring or are treatment by-products.

IN THIS REPORT, DISCUSSION IS LIMITED TO THE TREATED AND DISTRIBUTED WATER AND ADDRESSES ONLY THOSE PARAMETERS WITH CONCENTRATIONS ABOVE GUIDELINE VALUES AND ORGANIC PARAMETERS WITH POSITIVE RESULTS.

Results of the treated and distributed water indicate that two health related guidelines were exceeded.

BACTERIOLOGY

Standard Plate Count

One treated water and one distribution system sample were above the ODWO aesthetic guideline of 500 counts/mL for standard plate count in August indicating some deterioration in water quality.

Inorganic and Physical Parameters

Turbidity

The turbidity of the treated water as reported by the laboratory was above the health related ODWO of 1.0 Formazin Turbidity Unit (FTU) in the December sample at 1.3 FTU. The field turbidity did not support this value. Protocol for turbidity states that measurements should be made within 48 hours. This is not always achieved except when measured in the field. The field turbidity values, therefore, are considered more reliable. Field turbidity

values of 1.5 FTU in June and 5.5 FTU in October treated water samples were reported by plant personnel.

Aluminum

The plant operational guideline of 100 µg/L as Al in water leaving the plant was exceeded in five treated water samples and four distribution samples.

Organic Parameters

Trihalomethanes

Trihalomethanes (THMs) are acknowledged to be produced during the water treatment process and will always occur in chlorinated surface waters. THMs are comprised of Chloroform, Chlorodibromomethane and Dichlorobromomethane. Bromoform occurs occasionally. Results are reported for the individual compounds as well as for total THMs. All Total THM occurrences in the treated and distributed samples, ranging from 16.2 ug/L to 46.6 ug/L, were well below the ODWO of 350 ug/L.

CONCLUSIONS

No health related guidelines were exceeded.

Results listed in this report for 1989 are consistent with results reported for previous years.

The treated water was generally of good quality and this was maintained in the distribution system.

TABLE 3

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP SAMPLE DAY CONDITIONS FOR 1989

| SAMPLE DAY CONDITIONS | | | | TREATMENT CHEMICAL DOSAGES (MG/L) | | |
|-----------------------|---------------------|------------------|------------------|-----------------------------------|-------------------|--|
| DATE | DELAY* TIME(HRS) | FLOW (1000M3) | PRE-CHLORINATION | | POST-CHLORINATION | |
| | | | CHLORINE | COAGULATION ALUM LIQUID | CHLORINE | |
| JAN 17 | 5.4 | 7.1 | 1.45 | 17.19 | .11 | |
| FEB 21 | 4.4 | 8.3 | .89 | 10.38 | .10 | |
| MAR 21 | 5.3 | 6.8 | 1.13 | 27.78 | .15 | |
| APR 18 | 4.6 | 7.8 | 1.27 | 10.09 | .17 | |
| MAY 16 | 8.0 | 7.3 | .78 | 15.71 | .12 | |
| JUN 20 | 6.2 | 8.6 | .52 | 11.69 | .24 | |
| JUL 18 | 2.7 | 16.2 | .97 | 16.90 | .25 | |
| SEP 19 | 4.5 | 8.5 | 1.80 | 11.56 | .10 | |
| OCT 17 | 5.5 | 8.5 | .74 | 13.91 | .13 | |
| NOV 21 | 5.5 | 6.7 | .81 | 16.69 | .22 | |
| DEC 19 | 4.5 | 8.4 | 2.72 | 15.33 | .15 | |

* THE DELAY TIME BETWEEN THE RAW AND TREATED WATER SAMPLING, SHOULD ESTIMATE THE RETENTION TIME.

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY

SUMMARY TABLE OF RESULTS (1989)

| SCAN | PARAMETER | RAW | | TREATED | | SITE 1 | |
|------------------------------|-----------------------|-------|----------------|---------|----------------|--------|----------------|
| | | TOTAL | POSITIVE TRACE | TOTAL | POSITIVE TRACE | TOTAL | POSITIVE TRACE |
| BACTERIOLOGICAL | FECAL COLIFORM MF | 9 | 6 | 0 | - | - | - |
| | STANDARD PLATE CNT MF | - | - | 11 | 2 | 0 | 6 |
| | TOTAL COLIFORM MF | 10 | 10 | 0 | 11 | 1 | 0 |
| | T COLIFORM BCKGRD MF | 10 | 9 | 0 | 11 | 2 | 0 |
| *TOTAL SCAN BACTERIOLOGICAL | | 29 | 25 | 0 | 33 | 5 | 0 |
| *TOTAL GROUP BACTERIOLOGICAL | | 29 | 25 | 0 | 33 | 5 | 0 |
| CHEMISTRY (FLD) | FLD CHLORINE (COMB) | 1 | 1 | 0 | 12 | 0 | 17 |
| | FLD CHLORINE FREE | 1 | 1 | 0 | 12 | 0 | 17 |
| | FLD CHLORINE (TOTAL) | 1 | 1 | 0 | 12 | 0 | 17 |
| | FLD PH | 11 | 11 | 0 | 11 | 0 | 24 |
| | FLD TEMPERATURE | 8 | 7 | 0 | 9 | 8 | 0 |
| | FLD TURBIDITY | 12 | 12 | 0 | 12 | 0 | 11 |
| *TOTAL SCAN CHEMISTRY (FLD) | | 34 | 33 | 0 | 68 | 67 | 0 |
| CHEMISTRY (LAB) | ALKALINITY | 12 | 12 | 0 | 12 | 0 | 24 |
| | CALCIUM | 12 | 12 | 0 | 12 | 0 | 24 |
| | CYANIDE | 12 | 0 | 0 | 12 | 0 | 0 |
| | CHLORIDE | 12 | 12 | 0 | 12 | 0 | 24 |
| | COLOUR | 12 | 4 | 8 | 12 | 0 | 1 |
| | CONDUCTIVITY | 12 | 12 | 0 | 12 | 0 | 24 |

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY

SUMMARY TABLE OF RESULTS (1989)

| SCAN | PARAMETER | RAW | | TREATED | | SITE 1 | | | | |
|-----------------------------|----------------------|-------|----------------|---------|----------------|--------|----------------|-----|-----|----|
| CHEMISTRY (LAB) | | TOTAL | POSITIVE TRACE | TOTAL | POSITIVE TRACE | TOTAL | POSITIVE TRACE | | | |
| | FLUORIDE | 12 | 12 | 0 | 12 | 12 | 0 | 24 | 24 | 0 |
| | HARDNESS | 12 | 12 | 0 | 12 | 12 | 0 | 24 | 24 | 0 |
| | IONCAL | 12 | 12 | 0 | 12 | 12 | 0 | 24 | 24 | 0 |
| | LANGELIERS INDEX | 12 | 12 | 0 | 11 | 11 | 0 | 23 | 23 | 0 |
| | MAGNESIUM | 12 | 12 | 0 | 12 | 12 | 0 | 24 | 24 | 0 |
| | SODIUM | 12 | 12 | 0 | 12 | 12 | 0 | 24 | 24 | 0 |
| | AMMONIUM TOTAL | 12 | 9 | 0 | 12 | 1 | 5 | 24 | 6 | 8 |
| | NITRITE | 12 | 10 | 2 | 12 | 2 | 8 | 24 | 1 | 22 |
| | TOTAL NITRATES | 12 | 12 | 0 | 12 | 12 | 0 | 24 | 24 | 0 |
| | NITROGEN TOT KJELD | 12 | 12 | 0 | 12 | 12 | 0 | 24 | 24 | 0 |
| | PH | 12 | 12 | 0 | 12 | 12 | 0 | 24 | 24 | 0 |
| | PHOSPHORUS FIL REACT | 12 | 2 | 5 | 12 | 0 | 3 | - | - | - |
| | PHOSPHORUS TOTAL | 12 | 11 | 1 | 12 | 1 | 10 | - | - | - |
| | SULPHATE | 12 | 12 | 0 | 12 | 12 | 0 | 24 | 24 | 0 |
| | TURBIDITY | 12 | 12 | 0 | 12 | 10 | 2 | 24 | 20 | 4 |
| *TOTAL SCAN CHEMISTRY (LAB) | | 252 | 216 | 16 | 251 | 181 | 39 | 443 | 363 | 57 |
| ----- | | | | | | | | | | |
| METALS | SILVER | 12 | 0 | 2 | 12 | 0 | 3 | 24 | 0 | 7 |
| | ALUMINUM | 12 | 12 | 0 | 12 | 12 | 0 | 24 | 24 | 0 |
| | ARSENIC | 12 | 6 | 6 | 12 | 0 | 11 | 24 | 3 | 17 |
| | BARIUM | 12 | 12 | 0 | 12 | 12 | 0 | 24 | 24 | 0 |
| | BORON | 12 | 12 | 0 | 12 | 12 | 0 | 24 | 24 | 0 |
| | BERYLLIUM | 12 | 0 | 9 | 12 | 0 | 6 | 24 | 0 | 10 |

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY

SUMMARY TABLE OF RESULTS (1989)

| SCAN | PARAMETER | RAW | | TREATED | | SITE 1 | |
|-----------------------------------|----------------------|-------|----------------|---------|----------------|--------|----------------|
| | | TOTAL | POSITIVE TRACE | TOTAL | POSITIVE TRACE | TOTAL | POSITIVE TRACE |
| METALS | | | | | | | |
| | CADMIUM | 12 | 0 | 1 | 12 | 0 | 4 |
| | COBALT | 12 | 0 | 12 | 12 | 0 | 12 |
| | CHROMIUM | 12 | 12 | 0 | 12 | 0 | 24 |
| | COPPER | 12 | 11 | 1 | 12 | 3 | 9 |
| | IRON | 12 | 6 | 6 | 12 | 0 | 3 |
| | MERCURY | 12 | 9 | 3 | 12 | 10 | 2 |
| | MANGANESE | 12 | 12 | 0 | 12 | 10 | 2 |
| | MOLYBDENUM | 12 | 12 | 0 | 12 | 12 | 0 |
| | NICKEL | 12 | 3 | 9 | 12 | 3 | 9 |
| | LEAD | 12 | 12 | 0 | 12 | 2 | 9 |
| | ANTIMONY | 12 | 11 | 1 | 12 | 11 | 1 |
| | SELENIUM | 12 | 0 | 7 | 12 | 0 | 9 |
| | STRONTIUM | 12 | 12 | 0 | 12 | 12 | 0 |
| | TITANIUM | 12 | 12 | 0 | 12 | 10 | 2 |
| | THALLIUM | 12 | 0 | 5 | 12 | 0 | 2 |
| | URANIUM | 12 | 11 | 1 | 12 | 9 | 3 |
| | VANADIUM | 12 | 3 | 9 | 12 | 12 | 0 |
| | ZINC | 12 | 12 | 0 | 12 | 9 | 3 |
| *TOTAL SCAN METALS | | 288 | 180 | 72 | 288 | 148 | 93 |
| *TOTAL GROUP INORGANIC & PHYSICAL | | 574 | 429 | 88 | 607 | 396 | 132 |
| CHLOROMATICS | | | | | | | |
| | HEXACHLOROBUTADIENE | 12 | 0 | 0 | 11 | 0 | 0 |
| | 123 TRICHLOROBENZENE | 12 | 0 | 0 | 11 | 0 | 0 |
| *TOTAL SCAN METALS | | 288 | 180 | 72 | 288 | 148 | 93 |
| *TOTAL GROUP INORGANIC & PHYSICAL | | 574 | 429 | 88 | 607 | 396 | 132 |
| *TOTAL SCAN METALS | | 327 | 164 | 327 | 164 | 327 | 164 |
| *TOTAL GROUP INORGANIC & PHYSICAL | | 784 | 221 | 784 | 221 | 784 | 221 |

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY

SUMMARY TABLE OF RESULTS (1989)

| SCAN | PARAMETER | RAW | | TREATED | | SITE 1 | |
|-----------------------------|----------------------|-------|----------------|---------|----------------|--------|----------------|
| | | TOTAL | POSITIVE TRACE | TOTAL | POSITIVE TRACE | TOTAL | POSITIVE TRACE |
| CHLORODROMATICS | 1234 T-CHLOROBENZENE | 12 | 0 | 0 | 11 | 0 | 11 |
| | 1235 T-CHLOROBENZENE | 12 | 0 | 0 | 11 | 0 | 11 |
| | 124 TRICHLOROBENZENE | 12 | 0 | 0 | 11 | 0 | 11 |
| | 1245 T-CHLOROBENZENE | 12 | 0 | 0 | 11 | 0 | 11 |
| | 135 TRICHLOROBENZENE | 12 | 0 | 0 | 11 | 0 | 11 |
| | 135 TRICHLOROBENZENE | 12 | 0 | 0 | 11 | 0 | 11 |
| | 135 TRICHLOROBENZENE | 12 | 0 | 0 | 11 | 0 | 11 |
| | 135 TRICHLOROBENZENE | 12 | 0 | 0 | 11 | 0 | 11 |
| | 135 TRICHLOROBENZENE | 12 | 0 | 0 | 11 | 0 | 11 |
| | 135 TRICHLOROBENZENE | 12 | 0 | 0 | 11 | 0 | 11 |
| CHLORODROMATICS | 1234 T-CHLOROBENZENE | 12 | 0 | 0 | 11 | 0 | 11 |
| | 1235 T-CHLOROBENZENE | 12 | 0 | 0 | 11 | 0 | 11 |
| | 124 TRICHLOROBENZENE | 12 | 0 | 0 | 11 | 0 | 11 |
| | 1245 T-CHLOROBENZENE | 12 | 0 | 0 | 11 | 0 | 11 |
| | 135 TRICHLOROBENZENE | 12 | 0 | 0 | 11 | 0 | 11 |
| | 135 TRICHLOROBENZENE | 12 | 0 | 0 | 11 | 0 | 11 |
| | 135 TRICHLOROBENZENE | 12 | 0 | 0 | 11 | 0 | 11 |
| | 135 TRICHLOROBENZENE | 12 | 0 | 0 | 11 | 0 | 11 |
| | 135 TRICHLOROBENZENE | 12 | 0 | 0 | 11 | 0 | 11 |
| | 135 TRICHLOROBENZENE | 12 | 0 | 0 | 11 | 0 | 11 |
| *TOTAL SCAN CHLORODROMATICS | | 168 | 0 | 0 | 154 | 0 | 154 |
| CHLOROPHENOLS | 234 TRICHLOROPHENOL | 1 | 0 | 0 | 1 | 0 | 1 |
| | 2345 T-CHLOROPHENOL | 1 | 0 | 0 | 1 | 0 | 1 |
| | 2356 T-CHLOROPHENOL | 1 | 0 | 0 | 1 | 0 | 1 |
| | 245-TRICHLOROPHENOL | 1 | 0 | 0 | 1 | 0 | 1 |
| | 246-TRICHLOROPHENOL | 1 | 0 | 0 | 1 | 0 | 1 |
| | 246-TRICHLOROPHENOL | 1 | 0 | 0 | 1 | 0 | 1 |
| | 246-TRICHLOROPHENOL | 1 | 0 | 0 | 1 | 0 | 1 |
| | 246-TRICHLOROPHENOL | 1 | 0 | 0 | 1 | 0 | 1 |
| | 246-TRICHLOROPHENOL | 1 | 0 | 0 | 1 | 0 | 1 |
| | 246-TRICHLOROPHENOL | 1 | 0 | 0 | 1 | 0 | 1 |
| *TOTAL SCAN CHLOROPHENOLS | | 6 | 0 | 0 | 6 | 0 | 6 |

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY

SUMMARY TABLE OF RESULTS (1989)

| SCAN | PARAMETER | RAW | | TREATED | | SITE 1 | |
|------------------|-----------------------|-------|----------------|---------|----------------|--------|----------------|
| | | TOTAL | POSITIVE TRACE | TOTAL | POSITIVE TRACE | TOTAL | POSITIVE TRACE |
| PAH | PHENANTHRENE | 12 | 0 | 0 | 12 | 0 | 0 |
| | ANTHRACENE | 12 | 0 | 0 | 12 | 0 | 0 |
| | FLUORANTHRENE | 12 | 0 | 0 | 12 | 0 | 0 |
| | PYRENE | 12 | 0 | 0 | 12 | 0 | 0 |
| | BENZO(A)ANTHRACENE | 12 | 0 | 0 | 12 | 0 | 0 |
| | CHRYSENE | 12 | 0 | 0 | 12 | 0 | 0 |
| | DIMETH. BENZ(A)ANTHR | 4 | 0 | 0 | 4 | 0 | 0 |
| | BENZO(E) PYRENE | 12 | 0 | 0 | 12 | 0 | 0 |
| | BENZO(B) FLUORANTHENE | 12 | 0 | 0 | 12 | 0 | 0 |
| | PERYLENE | 12 | 0 | 0 | 12 | 0 | 0 |
| | BENZO(K) FLUORANTHENE | 12 | 0 | 0 | 12 | 0 | 0 |
| | BENZO(A) PYRENE | 7 | 0 | 0 | 7 | 0 | 0 |
| | BENZO(G,H,I) PERYLENE | 12 | 0 | 0 | 12 | 0 | 0 |
| | DIBENZO(A,H) ANTHRAC | 12 | 0 | 0 | 12 | 0 | 0 |
| | INDENO(1,2,3-C,D) PY | 12 | 0 | 0 | 12 | 0 | 0 |
| | BENZO(B) CHRYSENE | 12 | 0 | 0 | 12 | 0 | 0 |
| | CORONENE | 12 | 0 | 0 | 12 | 0 | 0 |
| *TOTAL SCAN PAH | | 191 | 0 | 0 | 191 | 0 | 0 |
| ----- | | | | | | | |
| PESTICIDES & PCB | ALDRIN | 12 | 0 | 0 | 11 | 0 | 11 |
| | ALPHA BHC | 12 | 0 | 8 | 11 | 0 | 6 |
| | BETA BHC | 12 | 0 | 0 | 11 | 0 | 11 |
| | LINDANE | 12 | 0 | 1 | 11 | 0 | 2 |
| | | | | | | 11 | 0 |
| | | | | | | 4 | |

TABLE 4
DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY

SUMMARY TABLE OF RESULTS (1989)

| SCAN | PARAMETER | RAW | | TREATED | | SITE 1 | |
|------------------|---------------------|-------|----------------|---------|----------------|--------|----------------|
| | | TOTAL | POSITIVE TRACE | TOTAL | POSITIVE TRACE | TOTAL | POSITIVE TRACE |
| PESTICIDES & PCB | ALPHA CHLORDANE | 12 | 0 | 0 | 11 | 0 | 11 |
| | GAMMA CHLORDANE | 12 | 0 | 0 | 11 | 0 | 11 |
| | DIELDRIN | 12 | 0 | 0 | 11 | 0 | 11 |
| | METHOXYCHLOR | 12 | 0 | 0 | 11 | 0 | 11 |
| | ENDOSULFAM I | 12 | 0 | 0 | 11 | 0 | 11 |
| | ENDOSULFAM II | 12 | 0 | 0 | 11 | 0 | 11 |
| | ENDRIN | 12 | 0 | 0 | 11 | 0 | 11 |
| | ENDOSULFAM SULPHATE | 12 | 0 | 0 | 11 | 0 | 11 |
| | HEPTACHLOR EPOXIDE | 12 | 0 | 0 | 11 | 0 | 11 |
| | HEPTACHLOR | 12 | 0 | 0 | 11 | 0 | 11 |
| | MIREX | 12 | 0 | 0 | 11 | 0 | 11 |
| | OXYCHLORDANE | 12 | 0 | 0 | 11 | 0 | 11 |
| | OPDOT | 12 | 0 | 0 | 11 | 0 | 11 |
| | PCB | 12 | 0 | 0 | 11 | 0 | 11 |
| | DDB | 12 | 0 | 0 | 11 | 0 | 11 |
| | PPDE | 12 | 0 | 0 | 11 | 0 | 11 |
| | PPDT | 12 | 0 | 0 | 11 | 0 | 11 |
| | ANETRINE | 12 | 0 | 0 | 12 | 0 | 6 |
| | ATRAZINE | 12 | 0 | 2 | 12 | 0 | 6 |
| | ATRAZONE | 12 | 0 | 0 | 12 | 0 | 6 |
| | CYANAZINE (BLADEX) | 12 | 0 | 0 | 12 | 0 | 6 |
| | D-ETHYL ATRAZINE | 12 | 0 | 1 | 12 | 0 | 6 |
| | O-ETHYL SIMAZINE | 12 | 0 | 0 | 12 | 0 | 6 |
| | PROMETONE | 12 | 0 | 0 | 12 | 0 | 6 |
| | PROPACINE | 12 | 0 | 0 | 12 | 0 | 6 |

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY

SUMMARY TABLE OF RESULTS (1989)

| SCAN | PARAMETER | RAW | | TREATED | | SITE 1 | |
|------------------------------|----------------------|-------|----------------|---------|----------------|--------|----------------|
| | | TOTAL | POSITIVE TRACE | TOTAL | POSITIVE TRACE | TOTAL | POSITIVE TRACE |
| PESTICIDES & PCB | PROMETRYNE | 12 | 0 | 0 | 12 | 0 | 6 |
| | METRIBUZIN (SENCOR) | 12 | 0 | 0 | 12 | 0 | 6 |
| | SIMAZINE | 12 | 0 | 0 | 12 | 0 | 6 |
| | ALACHLOR (LASSO) | 12 | 0 | 0 | 12 | 0 | 6 |
| | METOLACHLOR | 12 | 0 | 0 | 12 | 0 | 6 |
| *TOTAL SCAN PESTICIDES & PCB | | 408 | 0 | 12 | 367 | 0 | 309 |
| ----- | | | | | | | |
| PHENOLICS | PHENOLICS | 11 | 8 | 2 | 12 | 8 | 4 |
| ----- | | | | | | | |
| *TOTAL SCAN PHENOLICS | | 11 | 8 | 2 | 12 | 8 | 4 |
| ----- | | | | | | | |
| SPECIFIC PESTICIDES | TOXAPHENE | 12 | 0 | 0 | 11 | 0 | 11 |
| | 2,4,5-T | 1 | 0 | 0 | 1 | 0 | 0 |
| | 2,4-D | 1 | 0 | 0 | 1 | 0 | 0 |
| | 2,4-DB | 1 | 0 | 0 | 1 | 0 | 0 |
| | 2,4-D PROPIONIC ACID | 1 | 0 | 0 | 1 | 0 | 0 |
| | DICAMBA | 1 | 0 | 0 | 1 | 0 | 0 |
| | PICHLORAM | 0 | 0 | 0 | 0 | 0 | 0 |
| | SILVEX | 1 | 0 | 0 | 1 | 0 | 0 |
| | DIAZINON | 1 | 0 | 0 | 1 | 0 | 0 |
| | DICHLOROXYOS | 1 | 0 | 0 | 1 | 0 | 0 |
| | CHLORPYRIFOS | 1 | 0 | 0 | 1 | 0 | 0 |
| | | | | | | | |
| | | | | | | | |

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY

SUMMARY TABLE OF RESULTS (1989)

| SCAN | PARAMETER | RAW | | TREATED | | SITE 1 | |
|---------------------------------|------------------|-------|----------------|---------|----------------|--------|----------------|
| | | TOTAL | POSITIVE TRACE | TOTAL | POSITIVE TRACE | TOTAL | POSITIVE TRACE |
| SPECIFIC PESTICIDES | ETHION | 1 | 0 | 0 | 1 | 0 | 0 |
| | AZINPHOS-METHYL | 0 | 0 | 0 | 0 | 0 | 0 |
| | MALATHION | 1 | 0 | 0 | 1 | 0 | 0 |
| | HEVINPHOS | 1 | 0 | 0 | 1 | 0 | 0 |
| | METHYL PARATHION | 1 | 0 | 0 | 1 | 0 | 0 |
| | METHYLTRITHION | 1 | 0 | 0 | 1 | 0 | 0 |
| | PARATHION | 1 | 0 | 0 | 1 | 0 | 0 |
| | PHORATE | 1 | 0 | 0 | 1 | 0 | 0 |
| | RELDAN | 1 | 0 | 0 | 1 | 0 | 0 |
| | RONNEL | 1 | 0 | 0 | 1 | 0 | 0 |
| | AMINOCARB | 0 | 0 | 0 | 0 | 0 | 0 |
| | BENONYL | 1 | 0 | 0 | 1 | 0 | 0 |
| | BUX | 0 | 0 | 0 | 0 | 0 | 0 |
| | CARBOFURAN | 1 | 0 | 0 | 1 | 0 | 0 |
| | CICP | 1 | 0 | 0 | 1 | 0 | 0 |
| | DIALLATE | 1 | 0 | 0 | 1 | 0 | 0 |
| | EPTAM | 1 | 0 | 0 | 1 | 0 | 0 |
| | IPC | 1 | 0 | 0 | 1 | 0 | 0 |
| | PROPOXUR | 1 | 0 | 0 | 1 | 0 | 0 |
| | CARBARYL | 1 | 0 | 0 | 1 | 0 | 0 |
| | BUTYLATE | 1 | 0 | 0 | 1 | 0 | 0 |
| *TOTAL SCAN SPECIFIC PESTICIDES | | 39 | 0 | 0 | 38 | 0 | 0 |
| | | | | | | 11 | 0 |
| VOLATILES | BENZENE | 12 | 0 | 0 | 11 | 0 | 1 |
| | | | | | | 12 | 0 |
| | | | | | | 2 | 2 |

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY

SUMMARY TABLE OF RESULTS (1989)

| SCAN | PARAMETER | RAW TOTAL POSITIVE TRACE | TREATED | | SITE 1 | | | | | |
|-----------|--------------------------|-----------------------------|----------------------|----------------------|----------------------|----------------------|----|----|----|----|
| | | | TOTAL POSITIVE TRACE | TOTAL POSITIVE TRACE | TOTAL POSITIVE TRACE | TOTAL POSITIVE TRACE | | | | |
| VOLATILES | | | | | | | | | | |
| | TOLUENE | 12 | 0 | 1 | 11 | 0 | 5 | 12 | 0 | 8 |
| | ETHYLBENZENE | 12 | 0 | 2 | 11 | 0 | 4 | 12 | 0 | 3 |
| | P-XYLENE | 12 | 0 | 0 | 11 | 0 | 0 | 12 | 0 | 0 |
| | M-XYLENE | 12 | 0 | 1 | 11 | 0 | 2 | 12 | 0 | 1 |
| | O-XYLENE | 12 | 0 | 2 | 11 | 0 | 3 | 12 | 0 | 3 |
| | STYRENE | 12 | 0 | 4 | 11 | 0 | 8 | 12 | 0 | 9 |
| | 1,1 DICHLOROETHYLENE | 12 | 0 | 0 | 11 | 0 | 0 | 12 | 0 | 0 |
| | METHYLENE CHLORIDE | 12 | 0 | 0 | 11 | 0 | 0 | 12 | 0 | 0 |
| | 1,1,2,2 DICHLOROETHYLENE | 12 | 0 | 0 | 11 | 0 | 0 | 12 | 0 | 0 |
| | 1,1 DICHLOROETHANE | 12 | 0 | 0 | 11 | 0 | 0 | 12 | 0 | 0 |
| | CHLOROFORM | 12 | 0 | 3 | 11 | 11 | 0 | 12 | 12 | 0 |
| | 111, TRICHLOROETHANE | 12 | 0 | 2 | 11 | 0 | 2 | 12 | 0 | 1 |
| | 1,2 DICHLOROETHANE | 12 | 0 | 0 | 11 | 0 | 0 | 12 | 0 | 0 |
| | CARBON TETRACHLORIDE | 12 | 0 | 0 | 11 | 0 | 0 | 12 | 0 | 0 |
| | 1,2 DICHLOROPROPANE | 12 | 0 | 0 | 11 | 0 | 0 | 12 | 0 | 0 |
| | TRICHLOROETHYLENE | 12 | 0 | 0 | 11 | 0 | 0 | 12 | 0 | 0 |
| | DICHLOROBROMOMETHANE | 12 | 0 | 1 | 11 | 11 | 0 | 12 | 12 | 0 |
| | 112 TRICHLOROETHANE | 12 | 0 | 0 | 11 | 0 | 0 | 12 | 0 | 0 |
| | CHLORO(1BROMOMETHANE | 12 | 0 | 0 | 11 | 11 | 0 | 12 | 12 | 0 |
| | T-CHLOROETHYLENE | 12 | 0 | 0 | 11 | 0 | 0 | 12 | 0 | 0 |
| | BROMOFORM | 12 | 0 | 0 | 11 | 0 | 11 | 12 | 0 | 12 |
| | 1122 T-CHLOROETHANE | 12 | 0 | 0 | 11 | 0 | 0 | 12 | 0 | 0 |
| | CHLOROBENZENE | 12 | 0 | 0 | 11 | 0 | 0 | 12 | 0 | 0 |
| | 1,4 DICHLOROBENZENE | 12 | 0 | 0 | 11 | 0 | 0 | 12 | 0 | 0 |
| | 1,3 DICHLOROBENZENE | 12 | 0 | 0 | 11 | 0 | 0 | 12 | 0 | 0 |

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY

SUMMARY TABLE OF RESULTS (1989)

| SCAN | PARAMETER | RAW | | TREATED | | SITE 1 | |
|-----------------------|----------------------|-------|----------------|---------|----------------|--------|----------------|
| | | TOTAL | POSITIVE TRACE | TOTAL | POSITIVE TRACE | TOTAL | POSITIVE TRACE |
| VOLATILES | 1,2 DICHLOROETHYLENE | 12 | 0 | 0 | 11 | 0 | 12 |
| | ETHYLENE DIBROMIDE | 12 | 0 | 0 | 11 | 0 | 12 |
| | TOTL TRINALOMETHANES | 12 | 0 | 0 | 11 | 11 | 12 |
| *TOTAL SCAN VOLATILES | | 348 | 0 | 16 | 319 | 44 | 36 |
| *TOTAL GROUP ORGANIC | | 1171 | 8 | 30 | 1107 | 52 | 51 |
| TOTAL | | 1774 | 462 | 118 | 1747 | 453 | 183 |
| | | | | | | 1975 | 840 |
| | | | | | | | 277 |

KEY TO TABLE 5 and 6

- A ONTARIO DRINKING WATER OBJECTIVES (ODWO)
1. Maximum Acceptable Concentration (MAC)
 - 1+. MAC for Total Trihalomethanes
 - 1*. MAC for Bacteriological Analyses
- Poor water quality is indicated when :
- total coliform counts > 0 < 5
 - P/A Bottle Test is present after 48 hours
 - Aeromonas organisms are detected in more than 25% of samples in a single submission or in successive submissions from the same sampling site
 - Pseudomonas Aeruginosa, Staphylococcus Aureus and members of the Fecal Streptococcus group should not be detected in any sample
 - Standard Plate Count should not exceed 500 organisms per ml at 35 °C within 48 hours
2. Interim Maximum Acceptable Concentration (IMAC)
 3. Maximum Desirable Concentration (MDC)
 4. Aesthetic or Recommended Operational Guideline
- hardness levels between 80 and 100 mg/L as calcium carbonate are considered to provide an acceptable balance between corrosion and incrustation, water supplies with a hardness >200 mg/L are considered poor and those in excess of 500 mg/L are unacceptable.
- B HEALTH & WELFARE CANADA (H&W)
1. Maximum Acceptable Concentration (MAC)
 2. Proposed MAC
 3. Interim MAC
 4. Aesthetic Objective (AO) (for xylenes, the AO is a total)
- C WORLD HEALTH ORGANIZATION (WHO)
1. Guideline Value (GV)
 2. Tentative GV
 3. Aesthetic GV
- D US ENVIRONMENTAL PROTECTION AGENCY (EPA)
1. Maximum Contaminant Level (MCL)
 2. Suggested No-Adverse Effect Level (SNAEL)
 3. Lifetime Health Advisory
 4. EPA Ambient Water Quality Criteria
- F EUROPEAN ECONOMIC COMMUNITY (EEC)
1. Health Related Guideline Level
 2. Aesthetic Guideline Level
 3. Maximum Admissible Concentration (MADC)
- G CALIFORNIA STATE DEPARTMENT OF HEALTH-GUIDELINE VALUE
- H USSR MAXIMUM PERMISSIBLE CONCENTRATION
- I NEW YORK STATE AMBIENT WATER GUIDELINE
- N/A NONE AVAILABLE

INTERPRETATION OF DATA

The interpretation of analytical results that are obtained from measurements near the limit of detection of the measurement process is subject to greater uncertainty than those at higher concentrations. The principle areas of concern relate to whether the substance has actually been detected, whether it has been properly identified, and whether it is an artifact of the measurement process. In other words, false positives can be caused by the instrumentation or the test procedures used, when in fact these compounds are not present in the sample.

There are several methods to treat data from such measurements:

1. Exclude the low-level data because of this uncertainty factor. Studies of long-term environmental trends and modelling may however, be adversely affected by the exclusion of such data.
2. Qualify these data so the user is aware of the greater uncertainty associated with their use.

For the Drinking Water Surveillance Program, measurements near the limit of detection of the measurement process are reported with the code "<T". Results qualified by "W" indicate a zero measurement. These results are reported for purposes of modelling and long-term trend analysis and no significance should be attributed to a single determination of a substance below "T" (a single determination may well be a false positive). Repeat analysis or additional data are needed before it can be stated with certainty that the substance in question was truly present. On the other hand, it is less likely that repeated detection of a substance at or near the limit of detection at a specific location is solely due to an artifact in the measurement system, and more likely represents a true positive. The average of such data however, is still only an estimate of the amount of substance present subject to the possible biases of the method used.

LABORATORY RESULTS, REMARK DESCRIPTIONS

| | |
|-----|---|
| . | No Sample Taken |
| BDL | Below Minimum Measurable Amount |
| <T | Greater Than Detection Limit But Not Confident (SEE INTERPRETATION OF RESULTS ABOVE) |
| > | Results Are Greater Than The Upper Limit |
| <=> | Approximate Result |
| !CS | No Data: Contamination Suspected |
| !IL | No Data: Sample Incorrectly Labelled |
| !IS | No Data: Insufficient Sample |
| !IV | No Data: Inverted Septum |
| !LA | No Data: Laboratory Accident |
| !LD | No Data: Test Queued After Sample Discarded |

| | |
|----------|--|
| !NA | No Data: No Authorization To Perform Reanalysis |
| !NP | No Data: No Procedure |
| !NR | No Data: Sample Not Received |
| !OP | No Data: Obscured Plate |
| !QU | No Data: Quality Control Unacceptable |
| !RE | No Data: Received Empty |
| !RO | No Data: See Attached Report (no numeric results) |
| !SM | No Data: Sample Missing |
| !SS | No Data: Send Separate Sample Properly Preserved |
| !UI | No Data: Indeterminant Interference |
| !TX | No Data: Time Expired |
| A3C | Approximate, Total Count Exceeded 300 Colonies |
| APL | Additional Peak, Large, Not Priority Pollutant |
| APS | Additional Peak, Less Than, Not Priority Pollutant |
| CIC | Possible Contamination, Improper Cap |
| CRO | Calculated Result Only |
| PPS | Test Performed On Preserved Sample |
| RMP | P and M-Xylene Not Separated |
| RRV | Rerun Verification |
| RVU | Reported Value Unusual |
| SPS | Several Peaks, Small, Not Priority Pollutant |
| UAL | Unreliable: Sample Age Exceeds Normal Limit |
| UCR | Unreliable: Could Not Confirm By Reanalysis |
| UCS | Unreliable: Contamination Suspected |
| USD | Unreliable: Sample Decomposition Noted |
| UIN | Unreliable: Indeterminant Interference |
| XP | Positive After X Number of Hours |
| T# (T06) | Result Taken After # Hours |

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

RAW TREATED SITE 1

STANDING FREE FLOW

BACTERIOLOGICAL

FECAL COLIFORM MF (CT/100ML)

DET'N LIMIT = 0

GUIDELINE = 0 (A1)

| | | | | |
|-----|-------|---|---|---|
| JAN | 0 T48 | . | . | . |
| FEB | 0 | . | . | . |
| MAR | 3 T48 | . | . | . |
| APR | 0 T48 | . | . | . |
| MAY | 3 | . | . | . |
| JUN | 1 LA | . | . | . |
| SEP | 2 | . | . | . |
| OCT | 18 | . | . | . |
| NOV | 4 | . | . | . |
| DEC | 4 | . | . | . |

STANDARD PLATE CNT MF ()

DET'N LIMIT = 0

GUIDELINE = 500/ML (A1)

| | | | | |
|-----|---|--------|---|---------|
| JAN | . | 0 <=> | . | 14 T24 |
| FEB | . | 0 <=> | . | 131 T24 |
| MAR | . | 0 <=> | . | 33 T24 |
| APR | . | 0 <=> | . | 3 <=> |
| MAY | . | 0 <=> | . | 8 <=> |
| JUN | . | 0 <=> | . | 0 <=> |
| JUL | . | . | . | 8 <=> |
| AUG | . | 2400 > | . | 540 |
| SEP | . | 71 | . | 34 |
| OCT | . | 4 <=> | . | 49 |
| NOV | . | 0 <=> | . | 2 <=> |
| DEC | . | 0 <=> | . | 0 <=> |

TOTAL COLIFORM MF (CT/100ML)

DET'N LIMIT = 0

GUIDELINE = 5/100ML(A1)

| | | | | |
|-----|---------|-------|---|-------|
| JAN | 52 A3C | 0 T48 | . | 0 T24 |
| FEB | 30 A3C | 0 T48 | . | 0 T24 |
| MAR | 680 A3C | 0 T48 | . | 0 T24 |
| APR | 8 T48 | 0 T48 | . | 0 T24 |
| MAY | 100 A3C | 0 | . | 0 |
| JUN | 28 A3C | 5 | . | 3 |
| JUL | . | . | . | 0 |
| AUG | . | 0 | . | 0 |
| SEP | 48 A3C | 0 | . | 0 |
| OCT | 300 A3C | 0 | . | 0 |
| NOV | 130 | 0 | . | 0 |
| DEC | 70 A3C | 0 | . | 0 |

T COLIFORM BCKGRD MF (CT/100ML)

DET'N LIMIT = 0

GUIDELINE = N/A

| | | | | |
|-----|----------|-------|---|-------|
| JAN | 1360 A3C | 0 T48 | . | 0 T24 |
| FEB | 4800 > | 0 T48 | . | 0 T24 |
| MAR | 8400 A3C | 0 T48 | . | 0 T24 |
| APR | 72 T48 | 0 T48 | . | 0 T24 |
| MAY | 9600 > | 0 | . | 0 |

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

| | RAW | TREATED | SITE 1 | |
|--|-----|---------|----------|-----------|
| | | | STANDING | FREE FLOW |

| | | | | |
|-----|----------|-----|---|---|
| JUN | 4400 A3C | 2 | . | 6 |
| JUL | . | . | . | 0 |
| AUG | . | 0 | . | 0 |
| SEP | 9600 > | 0 | . | 0 |
| OCT | 48000 > | 0 | . | 0 |
| NOV | BDL | 109 | . | 0 |
| DEC | 1320 A3C | 0 | . | 0 |

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

RAW

TREATED

SITE 1

STANDING

FREE FLOW

CHEMISTRY (FLD)

FLD CHLORINE (COMB) ()

DET'M LIMIT = N/A

GUIDELINE = N/A

| | | | | |
|-----|------|------|------|------|
| JAN | . | .080 | . | .060 |
| FEB | .700 | .100 | . | .050 |
| MAR | . | .060 | . | .060 |
| APR | . | .090 | . | .080 |
| MAY | . | .100 | . | .040 |
| JUN | . | .060 | . | .050 |
| JUL | . | .080 | .000 | .000 |
| AUG | . | .100 | .000 | .060 |
| SEP | . | .070 | . | .040 |
| OCT | . | .100 | .000 | .050 |
| NOV | . | .050 | .000 | .000 |
| DEC | . | .090 | .100 | .000 |

FLD CHLORINE FREE ()

DET'M LIMIT = N/A

GUIDELINE = N/A

| | | | | |
|-----|------|------|------|------|
| JAN | . | .430 | . | .260 |
| FEB | .100 | .700 | . | .140 |
| MAR | . | .300 | . | .140 |
| APR | . | .340 | . | .140 |
| MAY | . | .360 | . | .110 |
| JUN | . | .210 | . | .060 |
| JUL | . | .400 | .000 | .100 |
| AUG | . | .250 | .000 | .060 |
| SEP | . | .370 | . | .060 |
| OCT | . | .390 | .000 | .250 |
| NOV | . | .450 | .000 | .000 |
| DEC | . | .430 | .000 | .100 |

FLD CHLORINE (TOTAL) ()

DET'M LIMIT = N/A

GUIDELINE = N/A

| | | | | |
|-----|------|------|------|------|
| JAN | . | .510 | . | .320 |
| FEB | .100 | .100 | . | .190 |
| MAR | . | .360 | . | .210 |
| APR | . | .430 | . | .220 |
| MAY | . | .460 | . | .150 |
| JUN | . | .270 | . | .110 |
| JUL | . | .480 | .000 | .100 |
| AUG | . | .350 | .000 | .120 |
| SEP | . | .440 | . | .100 |
| OCT | . | .490 | .000 | .320 |
| NOV | . | .500 | .100 | .100 |
| DEC | . | .520 | .100 | .100 |

FLD PH (DMMSLESS)

DET'M LIMIT = N/A

GUIDELINE = 6.5-8.5(A4)

| | | | | |
|-----|-------|-------|-------|-------|
| JAN | 7.700 | 7.200 | 7.400 | 7.400 |
| FEB | 7.400 | 7.600 | 7.600 | 7.400 |
| MAR | . | . | 7.400 | 7.400 |

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

| | RAW | TREATED | SITE 1 | |
|--|-----|---------|----------|-----------|
| | | | STANDING | FREE FLOW |

| | | | | |
|-----|-------|-------|-------|-------|
| APR | 7.800 | 7.400 | 7.600 | 7.600 |
| MAY | 7.900 | 7.400 | 7.800 | 7.600 |
| JUN | 7.600 | 7.600 | 7.600 | 7.600 |
| JUL | 8.000 | 7.400 | 7.600 | 7.600 |
| AUG | 8.000 | 7.500 | 7.800 | 7.600 |
| SEP | 7.900 | 7.300 | 7.600 | 7.400 |
| OCT | 7.800 | 7.300 | 7.600 | 7.400 |
| NOV | 7.800 | 7.400 | 7.400 | 7.400 |
| DEC | 7.800 | 7.300 | 6.800 | 7.600 |

| FLD TEMPERATURE () | DET'N LIMIT = N/A | GUIDELINE = 15 (A1) |
|---------------------|-------------------|---------------------|
|---------------------|-------------------|---------------------|

| | | | | |
|-----|--------|--------|--------|--------|
| JAN | . | . | 12.000 | 5.000 |
| FEB | . | . | 15.000 | 8.000 |
| MAR | . | . | 13.000 | 6.000 |
| APR | 4.500 | 4.500 | 15.000 | 7.000 |
| MAY | 6.000 | 6.500 | 16.000 | 9.000 |
| JUN | 13.500 | 13.500 | 17.000 | 15.000 |
| JUL | 18.000 | 18.000 | 21.000 | 19.000 |
| AUG | 16.500 | 17.000 | 19.000 | 19.000 |
| SEP | . | 16.000 | 20.000 | 19.000 |
| OCT | 8.500 | 9.000 | 17.000 | 15.000 |
| NOV | 3.500 | 3.500 | 18.000 | 12.000 |
| DEC | .000 | .000 | 15.000 | 7.000 |

| FLD TURBIDITY (FTU) | DET'N LIMIT = N/A | GUIDELINE = 1.0 (A1) |
|---------------------|-------------------|----------------------|
|---------------------|-------------------|----------------------|

| | | | | |
|-----|--------|-------|---|------|
| JAN | 2.100 | .060 | . | .090 |
| FEB | 1.400 | .180 | . | .200 |
| MAR | 20.000 | .120 | . | .200 |
| APR | 1.300 | .110 | . | .240 |
| MAY | 3.400 | .100 | . | .240 |
| JUN | 1.900 | 1.500 | . | .150 |
| JUL | 2.000 | .110 | . | .160 |
| AUG | 2.000 | .140 | . | .220 |
| SEP | 2.300 | .100 | . | .100 |
| OCT | 4.800 | 5.500 | . | .220 |
| NOV | 1.100 | .070 | . | .120 |
| DEC | 12.000 | .700 | . | . |

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

RAW

TREATED

SITE 1

STANDING

FREE FLOW

CHEMISTRY (LAB)

ALKALINITY (MG/L)

DET'N LIMIT = .200

GUIDELINE = 30-500 (A4)

| | | | | |
|-----|---------|--------|--------|--------|
| JAN | 103.100 | 91.600 | 93.600 | 93.500 |
| FEB | 102.800 | 95.400 | 95.600 | 94.600 |
| MAR | 104.300 | 88.300 | 86.400 | 87.500 |
| APR | 101.000 | 94.300 | 93.700 | 93.500 |
| MAY | 103.000 | 93.500 | 93.600 | 93.500 |
| JUN | 104.100 | 95.000 | 94.500 | 94.100 |
| JUL | 97.800 | 87.200 | 88.100 | 90.900 |
| AUG | 100.400 | 91.900 | 92.000 | 92.100 |
| SEP | 96.800 | 88.500 | 88.600 | 88.100 |
| OCT | 104.100 | 95.300 | 95.700 | 94.800 |
| NOV | 103.000 | 93.100 | 90.300 | 92.300 |
| DEC | 105.300 | 96.000 | 96.200 | 96.800 |

CALCIUM (MG/L)

DET'N LIMIT = .100

GUIDELINE = 100 (F2)

| | | | | |
|-----|--------|--------|--------|--------|
| JAN | 40.600 | 41.400 | 40.200 | 39.800 |
| FEB | 43.200 | 41.600 | 40.400 | 41.000 |
| MAR | 41.600 | 41.200 | 41.800 | 41.800 |
| APR | 42.800 | 43.400 | 42.400 | 42.200 |
| MAY | 41.000 | 41.200 | 41.400 | 41.200 |
| JUN | 42.000 | 41.000 | 40.400 | 40.000 |
| JUL | 37.400 | 38.400 | 37.200 | 37.400 |
| AUG | 39.200 | 41.600 | 40.600 | 41.000 |
| SEP | 37.200 | 36.800 | 37.600 | 35.800 |
| OCT | 41.000 | 41.800 | 41.400 | 41.200 |
| NOV | 40.800 | 40.200 | 42.000 | 39.800 |
| DEC | 43.000 | 42.400 | 41.500 | 41.900 |

CHLORIDE (MG/L)

DET'N LIMIT = .200

GUIDELINE = 250 (A3)

| | | | | |
|-----|--------|--------|--------|--------|
| JAN | 25.000 | 25.700 | 25.800 | 25.900 |
| FEB | 27.100 | 26.700 | 27.100 | 25.500 |
| MAR | 26.900 | 29.800 | 32.900 | 31.000 |
| APR | 27.600 | 29.600 | 29.200 | 27.000 |
| MAY | 28.100 | 30.300 | 30.400 | 30.000 |
| JUN | 25.500 | 26.700 | 25.900 | 25.900 |
| JUL | 22.900 | 24.100 | 23.500 | 22.900 |
| AUG | 23.200 | 24.500 | 24.500 | 24.400 |
| SEP | 22.600 | 24.200 | 24.000 | 24.000 |
| OCT | 24.200 | 25.400 | 24.600 | 24.500 |
| NOV | 23.200 | 23.900 | 27.100 | 24.200 |
| DEC | 24.800 | 25.800 | 25.400 | 25.300 |

COLOUR (NZU)

DET'N LIMIT = .5

GUIDELINE = 5.0 (A3)

| | | | | |
|-----|----------|----------|----------|----------|
| JAN | 1.500 <T | .500 <T | 1.000 <T | 1.000 <T |
| FEB | 2.000 <T | BDL | .500 <T | 1.500 <T |
| MAR | 4.000 | 1.000 <T | .500 <T | 2.000 <T |

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

| | RAW | TREATED | SITE 1 | |
|-----|----------|----------|----------|-----------|
| | | | STANDING | FREE FLOW |
| APR | 2.500 | 1.000 <T | 1.500 <T | 1.000 <T |
| MAY | 3.000 | 1.000 <T | 1.500 <T | 2.500 |
| JUN | 2.500 | .500 <T | 1.000 <T | 1.000 <T |
| JUL | 2.000 <T | .500 <T | 1.000 <T | 1.000 <T |
| AUG | 2.000 <T | .500 <T | 1.000 <T | 1.000 <T |
| SEP | 2.000 <T | .500 <T | .500 <T | .500 <T |
| OCT | 2.000 <T | 1.000 <T | 1.500 <T | 1.000 <T |
| NOV | 2.000 <T | .500 <T | 1.000 <T | .500 <T |
| DEC | .500 <T | .500 <T | 1.000 <T | 2.000 <T |

CONDUCTIVITY (UMHO/CM)

DET'M LIMIT = 1

GUIDELINE = 400 (F2)

| | | | | |
|-----|-----|-----|-----|-----|
| JAN | 337 | 343 | 342 | 341 |
| FEB | 353 | 352 | 342 | 344 |
| MAR | 357 | 375 | 386 | 378 |
| APR | 356 | 367 | 363 | 350 |
| MAY | 354 | 363 | 362 | 360 |
| JUN | 341 | 344 | 339 | 336 |
| JUL | 317 | 322 | 318 | 318 |
| AUG | 322 | 327 | 324 | 321 |
| SEP | 319 | 320 | 321 | 316 |
| OCT | 342 | 346 | 345 | 341 |
| NOV | 335 | 339 | 369 | 338 |
| DEC | 346 | 355 | 349 | 350 |

FLUORIDE (MG/L)

DET'M LIMIT = .01

GUIDELINE = 2.400 (A1)

| | | | | |
|-----|------|------|------|------|
| JAN | .140 | .100 | .120 | .100 |
| FEB | .140 | .120 | .120 | .120 |
| MAR | .140 | .100 | .080 | .100 |
| APR | .160 | .140 | .120 | .140 |
| MAY | .160 | .140 | .160 | .120 |
| JUN | .120 | .120 | .120 | .080 |
| JUL | .120 | .120 | .120 | .120 |
| AUG | .140 | .120 | .120 | .120 |
| SEP | .120 | .120 | .120 | .120 |
| OCT | .140 | .120 | .120 | .120 |
| NOV | .120 | .120 | .080 | .100 |
| DEC | .160 | .120 | .120 | .140 |

HARDNESS (MG/L)

DET'M LIMIT = .500

GUIDELINE = 80-100 (A4)

| | | | | |
|-----|---------|---------|---------|---------|
| JAN | 137.000 | 138.000 | 136.000 | 135.000 |
| FEB | 145.000 | 141.000 | 137.000 | 139.000 |
| MAR | 141.000 | 140.000 | 142.000 | 141.000 |
| APR | 143.000 | 144.000 | 141.000 | 140.000 |
| MAY | 139.000 | 140.000 | 141.000 | 140.000 |
| JUN | 141.000 | 138.000 | 135.000 | 134.000 |
| JUL | 128.000 | 132.000 | 129.000 | 129.000 |
| AUG | 133.000 | 139.000 | 137.000 | 138.000 |

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

| | RAW | TREATED | SITE 1 | |
|-----------------------------|---------|---------|---------------------|-----------|
| | | | STANDING | FREE FLOW |
| SEP | 127.000 | 127.000 | 128.000 | 123.000 |
| OCT | 137.000 | 139.000 | 139.000 | 138.000 |
| NOV | 137.000 | 136.000 | 143.000 | 136.000 |
| DEC | 143.500 | 141.800 | 139.300 | 139.500 |
| IONCAL (DMNSLESS) | | | DET'M LIMIT = N/A | |
| | | | GUIDELINE = N/A | |
| JAN | 1.462 | .112 | 2.369 | 2.226 |
| FEB | .388 | .409 | 2.291 | .681 |
| MAR | .889 | 1.486 | 1.564 | 1.356 |
| APR | 6.285 | 6.744 | 9.591 | 1.566 |
| MAY | 1.598 | 1.966 | 1.602 | 1.223 |
| JUN | 1.142 | 2.241 | 2.146 | 2.907 |
| JUL | 1.440 | .135 | .922 | 1.765 |
| AUG | 2.432 | .704 | .371 | 1.319 |
| SEP | 2.346 | 2.791 | 1.854 | 3.732 |
| OCT | 1.653 | 1.009 | 1.086 | .860 |
| NOV | 2.120 | 2.250 | 3.349 | 2.532 |
| DEC | 2.256 | 4.444 | 4.645 | 4.596 |
| LANGLIERS INDEX (DMNSLESS) | | | DET'M LIMIT = N/A | |
| | | | GUIDELINE = N/A | |
| JAN | .407 | -.067 | -.050 | .095 |
| FEB | .381 | .182 | .181 | .213 |
| MAR | .550 | .402 | .428 | .454 |
| APR | .449 | .264 | .282 | .260 |
| MAY | .539 | .448 | .461 | .439 |
| JUN | .285 | .285 | .187 | .201 |
| JUL | .500 | .261 | .242 | .398 |
| AUG | .442 | .428 | .369 | .364 |
| SEP | .383 | .310 | .229 | .266 |
| OCT | .565 | .414 | .412 | .406 |
| NOV | .459 | .278 | .321 | .330 |
| DEC | .550 | .523 | .545 | .452 |
| MAGNESIUM (MG/L) | | | DET'M LIMIT = .050 | |
| | | | GUIDELINE = 30 (F2) | |
| JAN | 8.600 | 8.600 | 8.700 | 8.600 |
| FEB | 9.100 | 9.000 | 8.700 | 8.900 |
| MAR | 8.900 | 9.000 | 9.100 | 9.000 |
| APR | 8.700 | 8.700 | 8.600 | 8.400 |
| MAY | 8.900 | 9.100 | 9.000 | 9.000 |
| JUN | 8.700 | 8.600 | 8.400 | 8.400 |
| JUL | 8.600 | 8.700 | 8.600 | 8.600 |
| AUG | 8.500 | 8.500 | 8.700 | 8.600 |
| SEP | 8.400 | 8.500 | 8.400 | 8.200 |
| OCT | 8.400 | 8.500 | 8.700 | 8.600 |
| NOV | 8.500 | 8.600 | 9.300 | 8.800 |
| DEC | 8.800 | 8.750 | 8.700 | 8.500 |

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

RAW

TREATED

SITE 1

STANDING

FREE FLOW

| SODIUM (MG/L) | | DET'N LIMIT = .200 | | | GUIDELINE = 200 (C3) |
|-----------------------|---------|---------------------|---------|---------|-------------------------|
| JAN | 13.400 | 13.400 | 13.200 | 13.400 | |
| FEB | 14.200 | 13.600 | 12.800 | 13.000 | |
| MAR | 14.600 | 16.000 | 17.200 | 16.200 | |
| APR | 18.400 | 19.600 | 22.400 | 13.700 | |
| MAY | 15.400 | 15.600 | 15.600 | 15.600 | |
| JUN | 13.200 | 13.200 | 13.200 | 12.800 | |
| JUL | 12.200 | 12.000 | 12.000 | 11.600 | |
| AUG | 11.600 | 11.400 | 11.600 | 11.600 | |
| SEP | 12.000 | 12.000 | 12.200 | 12.200 | |
| OCT | 13.400 | 13.000 | 12.800 | 12.600 | |
| NOV | 12.200 | 12.200 | 14.000 | 12.000 | |
| DEC | 11.300 | 11.500 | 11.200 | 11.200 | |
| AMMONIUM TOTAL (MG/L) | | DET'N LIMIT = 0.002 | | | GUIDELINE = .05 (F2) |
| JAN | BDL | .002 <T | .006 <T | .004 <T | |
| FEB | .026 | .002 <T | .006 <T | .002 <T | |
| MAR | .024 | .002 <T | .002 <T | BDL | |
| APR | .054 | .028 | .012 | .010 | |
| MAY | .032 | BDL | BDL | BDL | |
| JUN | .036 | BDL | BDL | BDL | |
| JUL | .030 | .004 <T | .016 | .002 <T | |
| AUG | .042 | BDL | .052 | .008 <T | |
| SEP | .016 | .004 <T | .004 <T | BDL | |
| OCT | .012 | BDL | .056 | BDL | |
| NOV | BDL | BDL | .018 | BDL | |
| DEC | BDL | BDL | BDL | BDL | |
| NITRITE (MG/L) | | DET'N LIMIT = 0.001 | | | GUIDELINE = 1.000 (A1) |
| JAN | .006 | .003 <T | .003 <T | .003 <T | |
| FEB | .005 | .001 <T | .001 <T | .001 <T | |
| MAR | .015 | .005 | .007 | .004 <T | |
| APR | .007 | .001 <T | .001 <T | .001 <T | |
| MAY | .010 | .001 <T | .002 <T | .002 <T | |
| JUN | .012 | .002 <T | .003 <T | .002 <T | |
| JUL | .009 | .002 <T | .002 <T | .002 <T | |
| AUG | .005 | BDL | BDL | .001 <T | |
| SEP | .005 | .003 <T | .003 <T | .001 <T | |
| OCT | .005 | .001 <T | .001 <T | .001 <T | |
| NOV | .001 <T | BDL | .002 <T | .001 <T | |
| DEC | .004 <T | .005 | .004 <T | .004 <T | |
| TOTAL NITRATES (MG/L) | | DET'N LIMIT = .020 | | | GUIDELINE = 10.000 (A1) |
| JAN | .405 | .395 | .395 | .400 | |
| FEB | .425 | .415 | .395 | .395 | |
| MAR | .405 | .440 | .480 | .445 | |
| APR | .415 | .380 | .370 | .340 | |

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

RAW TREATED SITE 1

STANDING FREE FLOW

| | | | | |
|-----|------|------|------|------|
| MAY | .440 | .445 | .440 | .435 |
| JUN | .420 | .370 | .320 | .330 |
| JUL | .240 | .220 | .215 | .220 |
| AUG | .200 | .195 | .290 | .195 |
| SEP | .210 | .210 | .175 | .165 |
| OCT | .375 | .390 | .555 | .365 |
| NOV | .390 | .400 | .635 | .400 |
| DEC | .485 | .440 | .430 | .425 |

NITROGEN TOT KJELD (MG/L)

DET'N LIMIT = .020

GUIDELINE = N/A

| | | | | |
|-----|------|------|------|------|
| JAN | .220 | .150 | .150 | .150 |
| FEB | .210 | .170 | .150 | .160 |
| MAR | .380 | .190 | .210 | .210 |
| APR | .300 | .220 | .210 | .190 |
| MAY | .360 | .210 | .200 | .210 |
| JUN | .330 | .190 | .180 | .180 |
| JUL | .250 | .150 | .180 | .170 |
| AUG | .330 | .190 | .260 | .200 |
| SEP | .280 | .170 | .180 | .190 |
| OCT | .240 | .150 | .220 | .130 |
| NOV | .200 | .150 | .250 | .150 |
| DEC | .210 | .140 | .150 | .110 |

PH (DMNSLESS)

DET'N LIMIT = N/A

GUIDELINE = 6.5-8.5(A4)

| | | | | |
|-----|-------|-------|-------|-------|
| JAN | 8.230 | 7.800 | 7.820 | 7.970 |
| FEB | 8.180 | 8.030 | 8.040 | 8.070 |
| MAR | 8.360 | 8.290 | 8.320 | 8.340 |
| APR | 8.260 | 8.100 | 8.130 | 8.110 |
| MAY | 8.360 | 8.310 | 8.320 | 8.300 |
| JUN | 8.090 | 8.140 | 8.050 | 8.070 |
| JUL | 8.380 | 8.180 | 8.170 | 8.310 |
| AUG | 8.290 | 8.290 | 8.240 | 8.230 |
| SEP | 8.270 | 8.240 | 8.150 | 8.210 |
| OCT | 8.380 | 8.260 | 8.260 | 8.260 |
| NOV | 8.280 | 8.150 | 8.190 | 8.210 |
| DEC | 8.340 | 8.360 | 8.390 | 8.290 |

PHOSPHORUS FIL REACT (MG/L)

DET'N LIMIT = .0005

GUIDELINE = N/A

| | | | | |
|-----|---------|---------|---|---|
| JAN | .001 <T | .000 <T | . | . |
| FEB | BDL | BDL | . | . |
| MAR | .008 | .000 <T | . | . |
| APR | .000 <T | BDL | . | . |
| MAY | .001 <T | BDL | . | . |
| JUN | BDL | BDL | . | . |
| JUL | BDL | BDL | . | . |
| AUG | .000 <T | BDL | . | . |
| SEP | BDL | BDL | . | . |

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

| RAW | | TREATED | | SITE 1 | |
|--------------------------|---------|-----------|--------------------|----------|-----------------------|
| | | | | STANDING | FREE FLOW |
| ----- | | | | | |
| OCT | .001 <T | BDL | . | . | |
| NOV | BDL | BDL | . | . | |
| DEC | .004 | .000 <T | . | . | |
| ----- | | | | | |
| PHOSPHORUS TOTAL (MG/L) | | | DET'N LIMIT = .002 | | GUIDELINE = .40 (F2) |
| JAN | .013 | .002 <T | . | . | |
| FEB | .010 | .002 <T | . | . | |
| MAR | .058 | .002 <T | . | . | |
| APR | .008 <T | .004 <T | . | . | |
| MAY | .013 | .002 <T | . | . | |
| JUN | .029 | .012 | . | . | |
| JUL | .011 | BDL | . | . | |
| AUG | .014 | .003 <T | . | . | |
| SEP | .013 | .003 <T | . | . | |
| OCT | .013 | .002 <T | . | . | |
| NOV | .010 | .003 <T | . | . | |
| DEC | .026 | .003 <T | . | . | |
| ----- | | | | | |
| SULPHATE (MG/L) | | | DET'N LIMIT = .200 | | GUIDELINE = 500. (A3) |
| JAN | 27.330 | 37.280 | 35.910 | 34.650 | |
| FEB | 33.010 | 33.820 | 31.720 | 32.770 | |
| MAR | 28.890 | 43.520 | 45.540 | 44.290 | |
| APR | 29.370 | 36.140 | 35.660 | 32.940 | |
| MAY | 29.830 | 38.180 | 37.440 | 36.980 | |
| JUN | 28.650 | 34.730 | 34.050 | 33.750 | |
| JUL | 25.540 | 34.130 | 32.440 | 31.360 | |
| AUG | 27.050 | 33.860 | 32.960 | 32.280 | |
| SEP | 26.610 | 32.450 | 33.360 | 31.350 | |
| OCT | 28.040 | 35.260 | 35.120 | 34.910 | |
| NOV | 28.480 | 36.160 | 46.680 | 36.350 | |
| DEC | 28.660 | 38.640 | 36.220 | 35.920 | |
| ----- | | | | | |
| TURBIDITY (FTU) | | | DET'N LIMIT = .02 | | GUIDELINE = 1.00 (A1) |
| JAN | 3.200 | .460 | .680 | .830 | |
| FEB | 1.350 | .200 <T | .250 | .250 <T | |
| MAR | 45.000 | .430 | .710 | .580 | |
| APR | .990 | .290 | .330 | .290 | |
| MAY | 4.100 | .290 | .240 <T | .450 | |
| JUN | 2.700 | .880 | .410 | .520 | |
| JUL | 2.600 | .280 | .210 | .300 | |
| AUG | 2.900 | .870 | 1.170 | 1.510 | |
| SEP | 4.400 | .240 <T | .200 | .350 | |
| OCT | 7.500 | .450 | .400 | .220 <T | |
| NOV | 1.720 | .560 | .470 | .150 | |
| DEC | 27.000 | 1.300 RRV | .230 <T | .350 | |

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

| RAW | | TREATED | | SITE 1 | |
|------------------|----------|--|----------|----------|-----------|
| | | | | STANDING | FREE FLOW |
| <hr/> | | | | | |
| METALS | | | | | |
| SILVER (UG/L) | | DET'N LIMIT = .020 GUIDELINE = 50. (A1) | | | |
| JAN | BDL | BDL | BDL | BDL | |
| FEB | BDL | BDL | BDL | BDL | |
| MAR | .060 <T | .080 <T | .060 <T | .040 <T | |
| APR | BDL | BDL | .040 <T | BDL | |
| MAY | .030 <T | .060 <T | .060 <T | BDL | |
| JUN | BDL | .030 <T | .030 <T | .030 <T | |
| JUL | BDL | BDL | BDL | BDL | |
| AUG | BDL | BDL | BDL | BDL | |
| SEP | BDL | BDL | BDL | BDL | |
| OCT | BDL | BDL | BDL | BDL | |
| NOV | BDL | BDL | .370 <T | BDL | |
| DEC | BDL | BDL | BDL | BDL | |
| <hr/> | | | | | |
| ALUMINUM (UG/L) | | DET'N LIMIT = .050 GUIDELINE = 100.(A4) | | | |
| JAN | 45.240 | 58.000 | 32.480 | 75.400 | |
| FEB | 32.480 | 46.400 | 76.560 | 46.400 | |
| MAR | 394.400 | 26.680 | 70.760 | 25.520 | |
| APR | 13.920 | 75.400 | 37.120 | 73.080 | |
| MAY | 77.720 | 80.040 | 52.200 | 66.120 | |
| JUN | 23.000 | 150.000 | 96.000 | 150.000 | |
| JUL | 58.910 | 138.000 | 84.700 | 180.000 | |
| AUG | 22.000 | 170.000 | 160.000 | 180.000 | |
| SEP | 49.000 | 150.000 | 160.000 | 190.000 | |
| OCT | 69.000 | 67.000 | 75.000 | 63.000 | |
| NOV | 22.000 | 100.000 | 61.000 | 46.000 | |
| DEC | 190.000 | 140.000 | 51.000 | 53.000 | |
| <hr/> | | | | | |
| ARSENIC (UG/L) | | DET'N LIMIT = 0.050 GUIDELINE = 50.0 (A1) | | | |
| JAN | 1.200 | .180 <T | .290 <T | .310 <T | |
| FEB | 1.000 <T | .140 <T | .120 <T | BDL | |
| MAR | 1.600 | .760 <T | .890 <T | .630 <T | |
| APR | .790 <T | .500 <T | .320 <T | .410 <T | |
| MAY | 1.500 | .720 <T | .640 <T | 1.100 | |
| JUN | .100 <T | BDL | BDL | BDL | |
| JUL | 1.410 | .650 <T | 1.000 <T | .250 <T | |
| AUG | 1.400 | .880 <T | 1.200 | 1.100 | |
| SEP | 1.400 | .650 <T | .640 <T | .760 <T | |
| OCT | .950 <T | .230 <T | .270 <T | .210 <T | |
| NOV | 1.000 <T | .530 <T | .380 <T | .400 <T | |
| DEC | .760 <T | .140 <T | .190 <T | BDL | |
| <hr/> | | | | | |
| BARIUM (UG/L) | | DET'N LIMIT = 0.020 GUIDELINE = 1000. (A1) | | | |
| JAN | 24.000 | 22.000 | 23.000 | 22.000 | |
| FEB | 26.000 | 24.000 | 22.000 | 22.000 | |
| MAR | 29.000 | 23.000 | 24.000 | 22.000 | |

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

| | RAW | TREATED | SITE 1 | |
|--|-----|---------|----------|-----------|
| | | | STANDING | FREE FLOW |

| | | | | |
|-----|--------|--------|--------|--------|
| APR | 24.000 | 23.000 | 23.000 | 21.000 |
| MAY | 23.000 | 22.000 | 22.000 | 22.000 |
| JUN | 24.000 | 23.000 | 23.000 | 23.000 |
| JUL | 25.160 | 23.500 | 23.570 | 21.000 |
| AUG | 25.000 | 24.000 | 25.000 | 24.000 |
| SEP | 25.000 | 25.000 | 22.000 | 23.000 |
| OCT | 26.000 | 25.000 | 25.000 | 23.000 |
| NOV | 24.000 | 23.000 | 25.000 | 22.000 |
| DEC | 27.000 | 24.000 | 24.000 | 25.000 |

BORON (UG/L) DET'N LIMIT = 0.200 GUIDELINE = 5000. (A1)

| | | | | |
|-----|---------|--------|--------|--------|
| JAN | 52.000 | 26.000 | 38.000 | 34.000 |
| FEB | 74.000 | 34.000 | 45.000 | 33.000 |
| MAR | 100.000 | 94.000 | 95.000 | 88.000 |
| APR | 92.000 | 51.000 | 65.000 | 69.000 |
| MAY | 39.000 | 49.000 | 28.000 | 28.000 |
| JUN | 30.000 | 28.000 | 28.000 | 44.000 |
| JUL | 52.570 | 49.700 | 50.000 | 38.000 |
| AUG | 47.000 | 50.000 | 49.000 | 48.000 |
| SEP | 52.000 | 32.000 | 32.000 | 48.000 |
| OCT | 36.000 | 32.000 | 36.000 | 27.000 |
| NOV | 40.000 | 42.000 | 31.000 | 26.000 |
| DEC | 29.000 | 27.000 | 25.000 | 28.000 |

BERYLLIUM (UG/L) DET'N LIMIT = 0.010 GUIDELINE = N/A

| | | | | |
|-----|---------|---------|---------|---------|
| JAN | .120 <T | BDL | BDL | .030 <T |
| FEB | .150 <T | BDL | BDL | BDL |
| MAR | .070 <T | .050 <T | .230 <T | .120 <T |
| APR | .040 <T | .080 <T | .070 <T | BDL |
| MAY | BDL | .040 <T | BDL | BDL |
| JUN | BDL | BDL | BDL | BDL |
| JUL | .090 <T | BDL | .150 <T | BDL |
| AUG | .080 <T | .140 <T | .160 <T | .090 <T |
| SEP | .080 <T | BDL | BDL | .070 <T |
| OCT | .030 <T | .020 <T | BDL | BDL |
| NOV | .020 <T | .040 <T | .020 <T | .030 <T |
| DEC | BDL | BDL | BDL | BDL |

CADMIUM (UG/L) DET'N LIMIT = 0.050 GUIDELINE = 5.000 (A1)

| | | | | |
|-----|---------|---------|---------|---------|
| JAN | BDL | BDL | BDL | BDL |
| FEB | BDL | BDL | .240 <T | BDL |
| MAR | BDL | .080 <T | BDL | BDL |
| APR | BDL | .110 <T | .300 <T | BDL |
| MAY | .080 <T | .100 <T | .100 <T | BDL |
| JUN | BDL | BDL | .070 <T | .060 <T |
| JUL | BDL | BDL | .100 <T | BDL |
| AUG | BDL | .110 <T | BDL | BDL |

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

| RAW | | TREATED | SITE 1 | |
|------------------|----------|----------|--|-----------|
| | | | STANDING | FREE FLOW |
| SEP | BDL | BDL | BDL | BDL |
| OCT | BDL | BDL | .130 <T | BDL |
| NOV | BDL | BDL | .510 | BDL |
| DEC | BDL | BDL | .060 <T | BDL |
| <hr/> | | | | |
| COBALT (UG/L) | | | DET'N LIMIT = 0.020 GUIDELINE = N/A | |
| JAN | .160 <T | .110 <T | .110 <T | .120 <T |
| FEB | .190 <T | .200 <T | .220 <T | .240 <T |
| MAR | .360 <T | .140 <T | .140 <T | .160 <T |
| APR | .070 <T | .050 <T | .060 <T | .040 <T |
| MAY | .390 <T | .440 <T | .350 <T | .370 <T |
| JUN | .150 <T | .110 <T | .100 <T | .120 <T |
| JUL | .250 <T | .270 <T | .250 <T | .150 <T |
| AUG | .110 <T | .060 <T | .150 <T | .120 <T |
| SEP | .060 <T | .050 <T | .040 <T | .040 <T |
| OCT | .150 <T | .070 <T | .140 <T | .060 <T |
| NOV | .090 <T | .050 <T | .140 <T | .070 <T |
| DEC | .310 <T | .110 <T | .110 <T | .100 <T |
| <hr/> | | | | |
| CHROMIUM (UG/L) | | | DET'N LIMIT = 0.100 GUIDELINE = 50. (A1) | |
| JAN | 4.800 | .840 <T | 2.300 | 1.800 |
| FEB | 4.300 | 1.100 | 1.900 | 1.000 <T |
| MAR | 7.800 | 7.100 | 6.700 | 6.300 |
| APR | 2.300 | .990 <T | 1.100 | 1.500 |
| MAY | 4.900 | 7.600 | 1.200 | 1.000 <T |
| JUN | 1.300 | .960 <T | .800 <T | 4.900 |
| JUL | 5.790 | 5.300 | 5.330 | 3.900 |
| AUG | 3.900 | 4.500 | 4.100 | 4.300 |
| SEP | 6.900 | 2.100 | 1.900 | 5.500 |
| OCT | 3.600 | 2.400 | 3.400 | .630 <T |
| NOV | 2.300 | 7.000 | .660 <T | .500 <T |
| DEC | 86.000 | 24.000 | BDL | BDL |
| <hr/> | | | | |
| COPPER (UG/L) | | | DET'N LIMIT = .100 GUIDELINE = 1000 (A3) | |
| JAN | 3.500 | 1.000 <T | 61.000 | 23.000 |
| FEB | 3.500 | 1.400 | 110.000 | 4.000 |
| MAR | 4.000 | 1.500 | 49.000 | 5.000 |
| APR | 3.000 | .960 <T | 920.000 | 5.000 |
| MAY | 3.700 | .930 <T | 740.000 | 6.200 |
| JUN | 7.100 | 1.100 | 400.000 | 4.300 |
| JUL | 4.960 | .920 <T | 481.000 | 3.100 |
| AUG | 3.900 | .800 <T | 26.000 | 3.000 |
| SEP | 5.200 | .840 <T | 24.000 | 3.300 |
| OCT | 4.600 | 1.000 <T | 52.000 | 2.800 |
| NOV | 13.000 | .910 <T | 91.000 | 3.400 |
| DEC | 3.200 <T | 1.100 <T | 540.000 | 3.500 <T |

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

RAW

TREATED

SITE 1

STANDING

FREE FLOW

 IRON (UG/L) DET'N LIMIT = 4.000 GUIDELINE = 300. (A3)

| | | | | |
|-----|-----------|-----------|-----------|-----------|
| JAN | 56.000 | 16.000 <T | 21.000 <T | 41.000 <T |
| FEB | 31.000 <T | BDL | 46.000 <T | 41.000 <T |
| MAR | 320.000 | BDL | 25.000 <T | 37.000 <T |
| APR | 13.000 <T | BDL | 11.000 <T | 22.000 <T |
| MAY | 68.000 | BDL | 8.700 <T | 58.000 |
| JUN | 32.000 <T | 5.400 <T | 13.000 <T | 25.000 <T |
| JUL | 35.760 <T | BDL | 8.170 <T | BDL |
| AUG | 23.000 <T | BDL | 14.000 <T | 20.000 <T |
| SEP | 61.000 | BDL | 24.000 <T | 25.000 <T |
| OCT | 96.000 | BDL | 15.000 <T | BDL |
| NOV | 27.000 <T | BDL | 21.000 <T | 13.000 <T |
| DEC | 340.000 | 24.000 <T | 55.000 <T | 110.000 |

 MERCURY (UG/L) DET'N LIMIT = 0.010 GUIDELINE = 1.000 (A1)

| | | | | |
|-----|---------|----------|---|---------|
| JAN | .060 | .070 | . | .030 <T |
| FEB | .070 | .050 <T | . | .040 <T |
| MAR | .060 | .040 <T | . | .030 <T |
| APR | .050 <T | .070 | . | .050 <T |
| MAY | .060 | .070 UCS | . | .030 <T |
| JUN | .040 <T | .060 | . | .030 <T |
| JUL | .070 | .090 | . | .050 <T |
| AUG | .070 | .070 | . | .040 <T |
| SEP | .040 <T | .060 | . | .050 <T |
| OCT | .090 | .080 | . | .050 <T |
| NOV | .100 | .110 | . | .050 <T |
| DEC | .170 | .160 | . | .070 |

 MANGANESE (UG/L) DET'N LIMIT = .050 GUIDELINE = 50.0 (A3)

| | | | | |
|-----|--------|---------|-------|-------|
| JAN | 5.000 | .720 | 2.400 | 3.300 |
| FEB | 3.500 | .490 <T | 2.300 | 3.200 |
| MAR | 30.000 | 2.400 | 6.500 | 5.200 |
| APR | 3.000 | .610 | 2.200 | 3.200 |
| MAY | 5.700 | .430 <T | 2.300 | 5.800 |
| JUN | 6.400 | .810 | 3.300 | 5.600 |
| JUL | 4.900 | .730 | 2.640 | 3.300 |
| AUG | 3.300 | .560 | 3.500 | 4.900 |
| SEP | 6.600 | .580 | 4.400 | 5.800 |
| OCT | 8.000 | .630 | 4.000 | 2.000 |
| NOV | 3.400 | .730 | 4.900 | 2.500 |
| DEC | 18.000 | 1.700 | 4.500 | 6.600 |

 MOLYBDENUM (UG/L) DET'N LIMIT = 0.020 GUIDELINE = N/A

| | | | | |
|-----|-------|-------|-------|-------|
| JAN | 1.100 | 1.300 | 1.400 | 1.100 |
| FEB | 1.200 | 1.300 | 1.200 | 1.300 |
| MAR | 1.400 | 1.300 | 1.300 | 1.600 |
| APR | 1.300 | 1.300 | 1.400 | 1.300 |

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

RAW

TREATED

SITE 1

STANDING

FREE FLOW

| | | | | |
|-----|-------|-------|-------|-------|
| MAY | 1.400 | 1.500 | 1.600 | 1.500 |
| JUN | 1.500 | 1.400 | 1.500 | 1.500 |
| JUL | 1.560 | 1.690 | 1.510 | 1.600 |
| AUG | 1.600 | 1.500 | 1.700 | 1.500 |
| SEP | 1.200 | 1.300 | 1.300 | 1.300 |
| OCT | 1.300 | 1.300 | 1.300 | 1.300 |
| NOV | 1.000 | 1.100 | .970 | 1.100 |
| DEC | 1.100 | 1.300 | 1.100 | 1.300 |

NICKEL (UG/L)

DET'N LIMIT = 0.100 GUIDELINE = 50. (F3)

| | | | | |
|-----|----------|----------|----------|----------|
| JAN | 1.500 <T | 1.200 <T | 2.600 | 1.600 <T |
| FEB | .850 <T | .560 <T | 1.400 <T | .780 <T |
| MAR | 1.300 <T | 1.200 <T | 1.800 <T | 1.800 <T |
| APR | 1.200 <T | .950 <T | 1.200 <T | .720 <T |
| MAY | 4.500 | 4.400 | 4.700 | 4.600 |
| JUN | 1.700 <T | 1.300 <T | 1.600 <T | 1.000 <T |
| JUL | 2.950 | 2.710 | 5.570 | .410 <T |
| AUG | 1.100 <T | .720 <T | 1.200 <T | .860 <T |
| SEP | 1.500 <T | 1.400 <T | 1.600 <T | 1.300 <T |
| OCT | .710 <T | .370 <T | 23.000 | .480 <T |
| NOV | 1.600 <T | 2.300 | 45.000 | 1.900 <T |
| DEC | 2.100 | 1.400 <T | 2.600 | 1.600 <T |

LEAD (UG/L)

DET'N LIMIT = 0.050 GUIDELINE = 50. (A1)

| | | | | |
|-----|-------|---------|--------|---------|
| JAN | .280 | .060 <T | 3.200 | 1.200 |
| FEB | .860 | .140 <T | 10.000 | .430 |
| MAR | 1.400 | .270 | 1.800 | .550 |
| APR | .650 | .070 <T | 74.000 | 1.200 |
| MAY | .550 | .090 <T | 32.000 | 1.000 |
| JUN | .660 | .050 <T | 25.000 | .920 |
| JUL | .790 | .070 <T | 31.400 | .860 |
| AUG | .480 | .060 <T | 4.000 | .820 |
| SEP | .280 | BDL | 2.000 | .340 |
| OCT | .530 | .380 | 6.400 | .420 |
| NOV | .560 | .060 <T | 19.000 | .800 |
| DEC | .560 | .090 <T | 37.000 | .360 <T |

ANTIMONY (UG/L)

DET'N LIMIT = .050 GUIDELINE = 146. (D4)

| | | | | |
|-----|------|-------|-------|-------|
| JAN | .530 | .550 | .540 | .630 |
| FEB | .930 | .920 | .960 | .990 |
| MAR | .680 | .700 | .770 | .790 |
| APR | .650 | .670 | .840 | .640 |
| MAY | .890 | 1.100 | 1.300 | 1.200 |
| JUN | .890 | .860 | .930 | .830 |
| JUL | .770 | .730 | .870 | .860 |
| AUG | .570 | .500 | .850 | .980 |
| SEP | .540 | .560 | .480 | .630 |

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

| | RAW | TREATED | SITE 1 | |
|-------------------|----------|----------|--|-----------|
| | | | STANDING | FREE FLOW |
| <hr/> | | | | |
| OCT | .570 | .580 | .650 | .570 |
| NOV | .550 | .460 | .600 | .440 |
| DEC | .400 <T | .450 <T | .720 | .800 |
| <hr/> | | | | |
| SELENIUM (UG/L) | | | DET'M LIMIT = 0.200 GUIDELINE = 10. (A1) | |
| JAN | 1.100 <T | 1.500 <T | 1.300 <T | 1.200 <T |
| FEB | 2.000 <T | BDL | 5.100 <T | .870 <T |
| MAR | .330 <T | 6.100 <T | 4.400 <T | 5.400 <T |
| APR | 3.300 <T | 5.800 <T | 4.500 <T | 4.100 <T |
| MAY | 2.100 <T | 5.100 <T | 5.200 <T | 6.300 <T |
| JUN | 1.400 <T | 2.800 <T | 2.100 <T | 4.300 <T |
| JUL | BDL | 2.170 <T | 4.660 <T | 3.200 <T |
| AUG | 1.900 <T | 2.100 <T | 1.500 <T | 3.000 <T |
| SEP | BDL | 2.100 <T | 1.300 <T | 2.000 <T |
| OCT | BDL | BDL | BDL | 1.100 <T |
| NOV | BDL | 1.300 <T | 1.600 <T | 1.300 <T |
| DEC | BDL | BDL | 1.600 <T | 1.600 <T |
| <hr/> | | | | |
| STRONTIUM (UG/L) | | | DET'M LIMIT = .050 GUIDELINE = N/A | |
| JAN | 180.000 | 170.000 | 180.000 | 170.000 |
| FEB | 190.000 | 180.000 | 170.000 | 180.000 |
| MAR | 190.000 | 180.000 | 200.000 | 190.000 |
| APR | 190.000 | 190.000 | 200.000 | 180.000 |
| MAY | 200.000 | 210.000 | 210.000 | 210.000 |
| JUN | 190.000 | 190.000 | 180.000 | 190.000 |
| JUL | 183.000 | 175.000 | 182.000 | 180.000 |
| AUG | 180.000 | 180.000 | 180.000 | 180.000 |
| SEP | 190.000 | 190.000 | 190.000 | 190.000 |
| OCT | 190.000 | 180.000 | 180.000 | 180.000 |
| NOV | 180.000 | 190.000 | 210.000 | 180.000 |
| DEC | 190.000 | 190.000 | 190.000 | 190.000 |
| <hr/> | | | | |
| TITANIUM (UG/L) | | | DET'M LIMIT = .050 GUIDELINE = N/A | |
| JAN | 4.100 | 2.600 | 2.900 | 2.700 |
| FEB | 4.600 | 4.500 | 4.200 | 4.300 |
| MAR | 23.000 | 3.500 | 4.300 | 3.500 |
| APR | 5.500 | 5.600 | 5.500 | 5.100 |
| MAY | 3.300 | 1.700 <T | 1.400 <T | 1.700 <T |
| JUN | 3.900 | 3.400 | 3.100 | 3.500 |
| JUL | 5.270 | 3.710 | 3.790 | 3.800 |
| AUG | 5.000 | 4.100 | 4.500 | 4.000 |
| SEP | 4.300 | 2.600 | 2.800 | 3.200 |
| OCT | 3.700 | 2.200 | 2.300 | 2.200 |
| NOV | 3.700 | 3.300 | 3.500 | 3.800 |
| DEC | 7.500 | 3.100 <T | 2.800 <T | 2.200 <T |
| <hr/> | | | | |
| THALLIUM (UG/L) | | | DET'M LIMIT = .010 GUIDELINE = 13. (D4) | |

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

| | RAW | TREATED | SITE 1 | |
|--|-----|---------|----------|-----------|
| | | | STANDING | FREE FLOW |

| | | | | |
|-----|---------|---------|---------|---------|
| JAN | BDL | BDL | BDL | BDL |
| FEB | BDL | BDL | BDL | BDL |
| MAR | BDL | BDL | BDL | BDL |
| APR | .030 <T | BDL | .100 <T | .070 <T |
| MAY | .100 <T | .060 <T | .100 <T | .060 <T |
| JUN | BDL | BDL | BDL | BDL |
| JUL | .080 <T | .090 <T | .040 <T | BDL |
| AUG | BDL | BDL | BDL | BDL |
| SEP | BDL | BDL | BDL | BDL |
| OCT | .030 <T | BDL | BDL | BDL |
| NOV | .030 <T | BDL | BDL | .020 <T |
| DEC | BDL | BDL | BDL | BDL |

URANIUM (UG/L) DET'N LIMIT = .020 GUIDELINE = 100.(B1)

| | | | | |
|-----|---------|---------|---------|---------|
| JAN | .370 | .180 <T | .270 | .210 |
| FEB | .660 | .550 | .490 | .510 |
| MAR | .580 | .270 | .420 | .320 |
| APR | .480 | .440 | .250 | .460 |
| MAY | .520 | .380 | .210 | .380 |
| JUN | .500 | .470 | .300 | .410 |
| JUL | .730 | .380 | .250 | .380 |
| AUG | .600 | .440 | .390 | .430 |
| SEP | .280 | .210 | .170 <T | .180 <T |
| OCT | .330 | .260 | .220 | .200 <T |
| NOV | .320 | .200 <T | .180 <T | .200 <T |
| DEC | .400 <T | .220 <T | .170 <T | .270 <T |

VANADIUM (UG/L) DET'N LIMIT = .050 GUIDELINE = N/A

| | | | | |
|-----|---------|-------|---------|---------|
| JAN | .360 <T | .950 | .670 | .780 |
| FEB | .280 <T | .510 | .610 | .460 <T |
| MAR | .910 | .780 | .590 | .560 |
| APR | .230 <T | .550 | .420 <T | .600 |
| MAY | .540 | 1.100 | .920 | .960 |
| JUN | .250 <T | .680 | .580 | .630 |
| JUL | .480 <T | .820 | .630 | .820 |
| AUG | .430 <T | .860 | .760 | .730 |
| SEP | .430 <T | .880 | .900 | .880 |
| OCT | .410 <T | .790 | .680 | .720 |
| NOV | .380 <T | .920 | .850 | .790 |
| DEC | .830 | .770 | .740 | .690 |

ZINC (UG/L) DET'N LIMIT = .001 GUIDELINE = 5000. (A3)

| | | | | |
|-----|-------|-------|---------|--------|
| JAN | 2.200 | 1.800 | 220.000 | 23.000 |
| FEB | 2.800 | 1.900 | 570.000 | 5.300 |
| MAR | 5.300 | 3.100 | 28.000 | 7.900 |
| APR | 2.600 | 1.500 | 110.000 | 2.800 |
| MAY | 3.000 | 2.500 | 160.000 | 3.200 |

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

| | RAW | TREATED | SITE 1 | |
|-----|-------|----------|----------|-----------|
| | | | STANDING | FREE FLOW |
| JUN | 3.200 | 2.400 | 170.000 | 2.900 |
| JUL | 2.370 | 2.100 | 272.000 | 2.800 |
| AUG | 1.800 | 1.400 | 18.000 | 2.000 |
| SEP | 1.800 | .620 <T | 14.000 | 1.300 |
| OCT | 2.000 | 2.200 | 60.000 | 2.200 |
| NOV | 2.600 | .990 <T | 77.000 | 1.800 |
| DEC | 3.200 | 1.500 <T | 470.000 | 2.400 |

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

RAW

TREATED

SITE 1

STANDING

FREE FLOW

CHLOROAROMATICS

HEXACHLOROETHANE (NG/L)

DET'N LIMIT = 1.000

GUIDELINE = 1900 (D4)

| | | | | |
|-----|-----|-----|---|----------|
| JAN | BDL | BDL | . | BDL |
| FEB | BDL | BDL | . | 2.000 <T |
| MAR | BDL | BDL | . | BDL |
| APR | BDL | BDL | . | BDL |
| MAY | BDL | BDL | . | BDL |
| JUN | BDL | BDL | . | BDL |
| JUL | BDL | BDL | . | BDL |
| AUG | BDL | 1QU | . | 1QU |
| SEP | BDL | BDL | . | BDL |
| OCT | BDL | BDL | . | BDL |
| NOV | BDL | BDL | . | BDL |
| DEC | BDL | BDL | . | BDL |

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

| RAW | TREATED | SITE 1 |
|-----|---------|-------------------------|
| | | STANDING FREE FLOW |

PESTICIDES & PCB

| ALPHA BHC (NG/L) | | | DET'N LIMIT = 1.000 | GUIDELINE = 700 (G) |
|------------------|----------|----------|---------------------|---------------------|
| JAN | 2.000 <T | BDL | . | 2.000 <T |
| FEB | 1.000 <T | BDL | . | 1.000 <T |
| MAR | 2.000 <T | 3.000 <T | . | 2.000 <T |
| APR | 1.000 <T | BDL | . | 2.000 <T |
| MAY | 2.000 <T | 2.000 <T | . | 1.000 <T |
| JUN | BDL | 2.000 <T | . | 2.000 <T |
| JUL | BDL | 1.000 <T | . | 1.000 <T |
| AUG | 2.000 <T | 1QU | . | 1QU |
| SEP | BDL | BDL | . | 3.000 <T |
| OCT | BDL | BDL | . | 1.000 <T |
| NOV | 1.000 <T | 2.000 <T | . | 2.000 <T |
| DEC | 2.000 <T | 2.000 <T | . | 2.000 <T |

| LINDANE (NG/L) | | | DET'N LIMIT = 1.000 | GUIDELINE = 4000 (A1) |
|----------------|----------|----------|---------------------|-----------------------|
| JAN | BDL | BDL | . | BDL |
| FEB | 9.000 <T | BDL | . | 3.000 <T |
| MAR | BDL | 2.000 <T | . | 1.000 <T |
| APR | BDL | BDL | . | BDL |
| MAY | BDL | BDL | . | 1.000 <T |
| JUN | BDL | BDL | . | BDL |
| JUL | BDL | BDL | . | BDL |
| AUG | BDL | 1QU | . | 1QU |
| SEP | BDL | BDL | . | 1.000 <T |
| OCT | BDL | BDL | . | BDL |
| NOV | BDL | 2.000 <T | . | BDL |
| DEC | BDL | BDL | . | BDL |

| ATRAZINE (NG/L) | | | DET'N LIMIT = 50.00 | GUIDELINE = 60000 (B3) |
|-----------------|------------|------------|---------------------|------------------------|
| JAN | BDL | BDL | . | BDL |
| FEB | BDL | BDL | . | BDL |
| MAR | BDL | BDL | . | BDL |
| APR | BDL | BDL | . | 1LA |
| MAY | BDL | BDL | . | BDL |
| JUN | 250.000 <T | 190.000 <T | . | 250.000 <T |
| JUL | BDL | BDL | . | BDL |
| AUG | BDL | BDL | . | . |
| SEP | BDL | BDL | . | . |
| OCT | BDL | BDL | . | . |
| NOV | 120.000 <T | 140.000 <T | . | . |
| DEC | BDL | BDL | . | . |

| D-ETHYL ATRAZINE (NG/L) | | | DET'N LIMIT = N/A | GUIDELINE = N/A |
|-------------------------|-----|-----|-------------------|-----------------|
| JAN | BDL | BDL | . | BDL |
| FEB | BDL | BDL | . | BDL |
| MAR | BDL | BDL | . | BDL |

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

| | RAW | TREATED | SITE 1 | |
|--|-----|---------|----------|-----------|
| | | | STANDING | FREE FLOW |

| | | | | |
|-----|------------|------------|---|-----|
| APR | BDL | BDL | . | ILA |
| MAY | BDL | BDL | . | BDL |
| JUN | BDL | BDL | . | BDL |
| JUL | BDL | BDL | . | BDL |
| AUG | BDL | BDL | . | . |
| SEP | BDL | BDL | . | . |
| OCT | BDL | BDL | . | . |
| NOV | 240,000 <T | 220,000 <T | . | . |
| DEC | BDL | BDL | . | . |

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

| RAW | | TREATED | SITE 1 | |
|-------------------|---------|----------|-------------------|-----------------------|
| | | | STANDING | FREE FLOW |
| ----- | | | | |
| PHENOLICS | | | | |
| PHENOLICS (UG/L) | | | DET'N LIMIT = 0.2 | GUIDELINE = 2.00 (A3) |
| JAN | 1.200 | 1.600 | . | . |
| FEB | 1.600 | .600 | . | . |
| MAR | 2.600 | 2.600 | . | . |
| APR | 1.200 | 1.200 | . | . |
| MAY | 2.400 | 3.200 | . | . |
| JUN | 11S | 1.000 <T | . | . |
| JUL | 1.200 | 1.200 | . | . |
| AUG | .800 <T | 1.000 <T | . | . |
| SEP | 1.600 | 3.200 | . | . |
| OCT | 1.200 | 1.600 | . | . |
| NOV | BDL | .600 <T | . | . |
| DEC | .600 <T | .400 <T | . | . |

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

| RAW | TREATED | SITE 1 | |
|----------------------|---------|----------|--|
| | | STANDING | FREE FLOW |
| ----- | | | |
| VOLATILES | | | |
| BENZENE (UG/L) | | | DET'M LIMIT = .050 GUIDELINE = 5.0 (B1) |
| JAN | BDL | BDL | BDL |
| FEB | BDL | BDL | BDL |
| MAR | BDL | BDL | .050 <T |
| APR | BDL | .100 <T | .050 <T |
| MAY | BDL | BDL | BDL |
| JUN | BDL | BDL | BDL |
| JUL | BDL | BDL | BDL |
| AUG | BDL | IU | BDL |
| SEP | BDL | BDL | BDL |
| OCT | BDL | BDL | BDL |
| NOV | BDL | BDL | BDL |
| DEC | BDL | BDL | BDL |
| ----- | | | |
| TOLUENE (UG/L) | | | DET'M LIMIT = .050 GUIDELINE = 24.0 (B4) |
| JAN | BDL | .100 <T | .050 <T |
| FEB | BDL | BDL | .050 <T |
| MAR | BDL | .050 <T | .200 <T |
| APR | BDL | .350 <T | .200 <T |
| MAY | BDL | .100 <T | .050 <T |
| JUN | BDL | BDL | BDL |
| JUL | BDL | BDL | .050 <T |
| AUG | BDL | IU | .050 <T |
| SEP | .100 <T | BDL | BDL |
| OCT | BDL | BDL | BDL |
| NOV | BDL | BDL | BDL |
| DEC | BDL | .100 <T | .100 <T |
| ----- | | | |
| ETHYLBENZENE (UG/L) | | | DET'M LIMIT = .050 GUIDELINE = 2.4 (B4) |
| JAN | BDL | .100 <T | BDL |
| FEB | BDL | BDL | .050 <T |
| MAR | .050 <T | .050 <T | .050 <T |
| APR | .050 <T | .150 <T | .100 <T |
| MAY | BDL | .100 <T | BDL |
| JUN | BDL | BDL | BDL |
| JUL | BDL | BDL | BDL |
| AUG | BDL | IU | BDL |
| SEP | BDL | BDL | BDL |
| OCT | BDL | BDL | BDL |
| NOV | BDL | BDL | BDL |
| DEC | BDL | BDL | BDL |
| ----- | | | |
| M-XYLENE (UG/L) | | | DET'M LIMIT = .100 GUIDELINE = 300 (B4) |
| JAN | BDL | .100 <T | BDL |
| FEB | BDL | BDL | BDL |
| MAR | BDL | BDL | BDL |

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

| | RAW | TREATED | SITE 1 | |
|--|-----|---------|----------|-----------|
| | | | | |
| | | | STANDING | FREE FLOW |

| | | | | |
|-----|---------|---------|---|---------|
| APR | .100 <T | .300 <T | . | .200 <T |
| MAY | BDL | BDL | . | BDL |
| JUN | BDL | BDL | . | BDL |
| JUL | BDL | BDL | . | BDL |
| AUG | BDL | IU | . | BDL |
| SEP | BDL | BDL | . | BDL |
| OCT | BDL | BDL | . | BDL |
| NOV | BDL | BDL | . | BDL |
| DEC | BDL | BDL | . | BDL |

O-XYLENE (UG/L) DET'N LIMIT = .050 GUIDELINE = 300 (B4)

| | | | | |
|-----|---------|---------|---|---------|
| JAN | BDL | .050 <T | . | BDL |
| FEB | BDL | BDL | . | .050 <T |
| MAR | .050 <T | BDL | . | .050 <T |
| APR | .100 <T | .150 <T | . | .100 <T |
| MAY | BDL | .050 <T | . | BDL |
| JUN | BDL | BDL | . | BDL |
| JUL | BDL | BDL | . | BDL |
| AUG | BDL | IU | . | BDL |
| SEP | BDL | BDL | . | BDL |
| OCT | BDL | BDL | . | BDL |
| NOV | BDL | BDL | . | BDL |
| DEC | BDL | BDL | . | BDL |

STYRENE (UG/L) DET'N LIMIT = .050 GUIDELINE = 46.5 (D2)

| | | | | |
|-----|---------|---------|---|---------|
| JAN | BDL | .050 <T | . | BDL |
| FEB | .250 <T | .050 <T | . | .250 <T |
| MAR | .150 <T | .150 <T | . | .250 <T |
| APR | .150 <T | .300 <T | . | .250 <T |
| MAY | BDL | .350 <T | . | .050 <T |
| JUN | BDL | .100 <T | . | .050 <T |
| JUL | .100 <T | .100 <T | . | .100 <T |
| AUG | BDL | IU | . | .100 <T |
| SEP | BDL | BDL | . | .100 <T |
| OCT | BDL | BDL | . | BDL |
| NOV | BDL | .050 <T | . | BDL |
| DEC | BDL | BDL | . | .050 <T |

CHLOROFORM (UG/L) DET'N LIMIT = .100 GUIDELINE = 350 (A1+)

| | | | | |
|-----|---------|--------|---|--------|
| JAN | BDL | 8.800 | . | 8.500 |
| FEB | BDL | 8.800 | . | 5.300 |
| MAR | BDL | 12.200 | . | 13.000 |
| APR | BDL | 13.200 | . | 11.200 |
| MAY | BDL | 20.000 | . | 14.900 |
| JUN | BDL | 13.800 | . | 10.600 |
| JUL | BDL | 13.400 | . | 12.500 |
| AUG | .100 <T | IU | . | 13.700 |

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

| | RAW | TREATED | SITE 1 | |
|------------------------------|---------|---------|--|-----------|
| | | | STANDING | FREE FLOW |
| ----- | | | | |
| SEP | .200 <T | 14.800 | . | 12.600 |
| OCT | .200 <T | 11.500 | . | 8.900 |
| NOV | BDL | 9.300 | . | 8.300 |
| DEC | BDL | 9.400 | . | 4.200 |
| ----- | | | | |
| 111, TRICHLOROETHANE (UG/L) | | | DET'N LIMIT = .020 GUIDELINE = 200 (D1) | |
| JAN | BDL | BDL | . | BDL |
| FEB | BDL | BDL | . | BDL |
| MAR | BDL | BDL | . | BDL |
| APR | BDL | .020 <T | . | BDL |
| MAY | .020 <T | .020 <T | . | .040 <T |
| JUN | BDL | BDL | . | BDL |
| JUL | BDL | BDL | . | BDL |
| AUG | .020 <T | IU | . | BDL |
| SEP | BDL | BDL | . | BDL |
| OCT | BDL | BDL | . | BDL |
| NOV | BDL | BDL | . | BDL |
| DEC | BDL | BDL | . | BDL |
| ----- | | | | |
| DICHLOROBROMOMETHANE (UG/L) | | | DET'N LIMIT = .050 GUIDELINE = 350 (A1+) | |
| JAN | BDL | 10.200 | . | 9.550 |
| FEB | BDL | 11.900 | . | 7.500 |
| MAR | BDL | 9.750 | . | 9.050 |
| APR | BDL | 14.350 | . | 11.150 |
| MAY | BDL | 15.800 | . | 12.700 |
| JUN | BDL | 12.150 | . | 9.950 |
| JUL | BDL | 12.100 | . | 10.200 |
| AUG | BDL | IU | . | 10.400 |
| SEP | BDL | 13.000 | . | 10.450 |
| OCT | .150 <T | 11.500 | . | 8.550 |
| NOV | BDL | 9.650 | . | 7.750 |
| DEC | BDL | 9.950 | . | 5.900 |
| ----- | | | | |
| CHLORODIBROMOMETHANE (UG/L) | | | DET'N LIMIT = .100 GUIDELINE = 350 (A1+) | |
| JAN | BDL | 7.600 | . | 6.700 |
| FEB | BDL | 9.500 | . | 7.000 |
| MAR | BDL | 5.000 | . | 3.800 |
| APR | BDL | 11.700 | . | 8.200 |
| MAY | BDL | 10.000 | . | 8.200 |
| JUN | BDL | 8.600 | . | 7.300 |
| JUL | BDL | 7.800 | . | 5.600 |
| AUG | BDL | IU | . | 6.300 |
| SEP | BDL | 7.600 | . | 6.600 |
| OCT | BDL | 9.100 | . | 6.400 |
| NOV | BDL | 6.500 | . | 4.900 |
| DEC | BDL | 7.700 | . | 5.200 |

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM GRIMSBY WTP 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

| | RAW | TREATED | SITE 1 |
|--|-----|---------|-------------------------|
| | | | STANDING FREE FLOW |

| BROMOFORM (UG/L) | | | | DET'N LIMIT = .200 | GUIDELINE = 350 (A1+) |
|-------------------|--|--|--|--------------------|-----------------------|
|-------------------|--|--|--|--------------------|-----------------------|

| | | | | |
|-----|-----|----------|---|----------|
| JAN | BDL | 1.000 <T | . | .800 <T |
| FEB | BDL | 1.600 <T | . | 1.200 <T |
| MAR | BDL | .600 <T | . | .400 <T |
| APR | BDL | 1.800 <T | . | 1.200 <T |
| MAY | BDL | .800 <T | . | .800 <T |
| JUN | BDL | 1.000 <T | . | .800 <T |
| JUL | BDL | .800 <T | . | .600 <T |
| AUG | BDL | IU | . | .800 <T |
| SEP | BDL | 1.000 <T | . | 1.000 <T |
| OCT | BDL | 1.400 <T | . | 1.000 <T |
| NOV | BDL | .800 <T | . | .600 <T |
| DEC | BDL | 1.200 <T | . | 1.000 <T |

| TOTL TRIHALOMETHANES (UG/L) | | | | DET'N LIMIT = .500 | GUIDELINE = 350 (A1) |
|------------------------------|--|--|--|--------------------|----------------------|
|------------------------------|--|--|--|--------------------|----------------------|

| | | | | |
|-----|-----|--------|---|--------|
| JAN | BDL | 27.600 | . | 25.550 |
| FEB | BDL | 31.800 | . | 21.000 |
| MAR | BDL | 27.550 | . | 26.250 |
| APR | BDL | 41.050 | . | 31.750 |
| MAY | BDL | 46.600 | . | 36.600 |
| JUN | BDL | 35.550 | . | 28.650 |
| JUL | BDL | 34.100 | . | 28.900 |
| AUG | BDL | IU | . | 31.200 |
| SEP | BDL | 36.400 | . | 30.650 |
| OCT | BDL | 33.500 | . | 24.850 |
| NOV | BDL | 26.250 | . | 21.550 |
| DEC | BDL | 28.300 | . | 16.250 |

TRACE LEVELS OF TOLUENE ARE LABORATORY ARTIFACTS DERIVED FROM THE ANALYTICAL METHODOLOGY.

TRACE LEVELS OF STYRENE ARE CONSIDERED TO BE LABORATORY ARTIFACTS RESULTING FROM THE LABORATORY SHIPPING CONTAINERS.

Table 6

| <u>SCAN/PARAMETER</u> | <u>UNIT</u> | <u>DETECTION</u> | | <u>GUIDELINE</u> |
|--|-------------|------------------|---------|------------------|
| BACTERIOLOGICAL | | | | |
| FECAL COLIFORM MEMBRANE FILTRATION | CT/100ML | 0 | 0 | (A1) |
| STANDARD PLATE COUNT MEMBRANE FILTRATION | CT/ML | 0 | 500/ML | (A1) |
| TOTAL COLIFORM MEMBRANE FILTRATION | CT/100ML | 0 | 5/100mL | (A1) |
| TOTAL COLIFORM BACKGROUND MF | CT/100ML | 0 | N/A | |
| CHLOROAROMATICS | | | | |
| HEXACHLOROBUTADIENE | NG/L | 1.000 | 450. | (D4) |
| 1,2,3-TRICHLOROBENZENE | NG/L | 5.000 | 10000 | (I) |
| 1,2,3,4-TETRACHLOROBENZENE | NG/L | 1.000 | 10000 | (I) |
| 1,2,3,5-TETRACHLOROBENZENE | NG/L | 1.000 | 10000 | (I) |
| 1,2,4-TRICHLOROBENZENE | NG/L | 5.000 | 10000 | (I) |
| 1,2,4,5-TETRACHLOROBENZENE | NG/L | 1.000 | 38000 | (D4) |
| 1,3,5-TRICHLOROBENZENE | NG/L | 5.000 | 10000 | (D4) |
| HEXACHLOROBENZENE | NG/L | 1.0 | 10. | (C1) |
| HEXACHLOROETHANE | NG/L | 1.000 | 1900. | (D4) |
| OCTACHLOROSTYRENE | NG/L | 1.000 | N/A | |
| PENTACHLOROBENZENE | NG/L | 1.000 | 74000 | (D4) |
| 2,3,6-TRICHLOROTOLUENE | NG/L | 5.000 | N/A | |
| 2,4,5-TRICHLOROTOLUENE | NG/L | 5.000 | N/A | |
| 2,6,A-TRICHLOROTOLUENE | NG/L | 5.000 | N/A | |
| CHLOROPHENOLS | | | | |
| 2,3,4-TRICHLOROPHENOL | NG/L | 50. | N/A | |
| 2,3,4,5-TETRACHLOROPHENOL | NG/L | 50. | N/A | |
| 2,3,5,6-TETRACHLOROPHENOL | NG/L | 50. | N/A | |
| 2,4,5-TRICHLOROPHENOL | NG/L | 50. | 2600000 | (D4) |
| 2,4,6-TRICHLOROPHENOL | NG/L | 50. | 2000. | (B4) |
| PENTACHLOROPHENOL | NG/L | 50. | 30000. | (B4) |
| CHEMISTRY (FLD) | | | | |
| FIELD COMBINED CHLORINE RESIDUAL | MG/L | N/A | N/A | |
| FIELD FREE CHLORINE RESIDUAL | MG/L | N/A | N/A | |
| FIELD TOTAL CHLORINE RESIDUAL | MG/L | N/A | N/A | |
| FIELD PH | DMSNLESS | N/A | 6.5-8.5 | (A4) |
| FIELD TEMPERATURE | °C | N/A | <15 °C | (A1) |
| FIELD TURBIDITY | FTU | N/A | 1.0 | (A1) |
| CHEMISTRY (LAB) | | | | |
| ALKALINITY | MG/L | .200 | 30-500 | (A4) |
| CALCIUM | MG/L | .100 | 100. | (F2) |
| CYANIDE | MG/L | .001 | .20 | (A1) |
| CHLORIDE | MG/L | .200 | 250. | (A3) |
| COLOUR | TCU | .5 | 5.0 | (A3) |
| CONDUCTIVITY | UMHO/CM | 1. | 400. | (F2) |
| FLUORIDE | MG/L | .01 | 2.4 | (A1) |
| HARDNESS | MG/L | .50 | 80-100 | (A4) |
| MAGNESIUM | MG/L | .05 | 30. | (F2) |

| <u>SCAN/PARAMETER</u> | <u>UNIT</u> | <u>DETECTION</u> | |
|-------------------------|-------------|------------------|------------------|
| | | <u>LIMIT</u> | <u>GUIDELINE</u> |
| NITRITE | MG/L | .001 | 1.0 (A1) |
| TOTAL NITRATES | MG/L | .02 | 10. (A1) |
| NITROGEN TOTAL KJELDAHL | MG/L | .02 | N/A |
| PH | DMSNLESS | N/A | 6.5-8.5 (A4) |
| PHOSPHORUS FIL REACT | MG/L | .0005 | N/A |
| PHOSPHORUS TOTAL | MG/L | .002 | .40 (F2) |
| SULPHATE | MG/L | .200 | 500. (A3) |
| TOTAL SOLIDS | MG/L | 1. | 500. (A3) |
| TURBIDITY | FTU | .02 | 1.0 (A1) |

METALS

| | | | |
|------------|------|------|------------|
| ALUMINUM | UG/L | .050 | 100. (A4) |
| ANTIMONY | UG/L | .050 | 10. (F3) |
| ARSENIC | UG/L | .050 | 50. (A1) |
| BARIUM | UG/L | .020 | 1000. (A1) |
| BORON | UG/L | .200 | 5000. (A1) |
| BERYLLIUM | UG/L | .010 | 0.20 (H) |
| CADMIUM | UG/L | .050 | 5.0 (A1) |
| COBALT | UG/L | .020 | 1000. (H) |
| CHROMIUM | UG/L | .100 | 50. (A1) |
| COPPER | UG/L | .100 | 1000. (A3) |
| IRON | UG/L | 5.0 | 300. (A3) |
| MERCURY | UG/L | .01 | 1.0 (A1) |
| MANGANESE | UG/L | .050 | 50. (A3) |
| MOLYBDENUM | UG/L | .020 | 500. (H) |
| NICKEL | UG/L | .100 | 50. (F3) |
| LEAD | UG/L | .020 | 50. (A1) |
| SELENIUM | UG/L | .200 | 10. (A1) |
| SILVER | UG/L | .020 | 50. (A1) |
| STRONTIUM | UG/L | .100 | 2000. (H) |
| THALLIUM | UG/L | .010 | 13. (D4) |
| TITANIUM | UG/L | .100 | N/A |
| URANIUM | UG/L | .020 | 20. (A2) |
| VANADIUM | UG/L | .020 | 100. (H) |
| ZINC | UG/L | .020 | 5000. (A3) |

PHENOLICS

| | | | |
|---------------------------------|------|----|----------|
| PHENOLICS (UNFILTERED REACTIVE) | UG/L | .2 | 2.0 (A3) |
|---------------------------------|------|----|----------|

PESTICIDES & PCB

| | | | |
|--|------|------|--------------|
| ALDRIN | NG/L | 1.0 | 700. (A1) |
| AMETRINE | NG/L | 50. | 300000. (D3) |
| ATRAZINE | NG/L | 50. | 60000. (B3) |
| ALPHA HEXACHLOROCYCLOHEXANE (BHC) | NG/L | 1.0 | 700. (G) |
| BETA HEXACHLOROCYCLOHEXANE (BHC) | NG/L | 1.0 | 300. (G) |
| GAMMA HEXACHLOROCYCLOHEXANE (LINDANE) | NG/L | 1.0 | 4000. (A1) |
| ALPHA CHLORDANE | NG/L | 2.0 | 7000. (A1) |
| GAMMA CHLORDANE | NG/L | 2.0 | 7000. (A1) |
| BLADDEX | NG/L | 100. | 10000. (B3) |
| DIELDRIN | NG/L | 2.0 | 700. (A1) |
| METHOXYCHLOR | NG/L | 5.0 | 900000. (B1) |
| ENDOSULFAN 1 (THIODAN I) | NG/L | 2.0 | 74000. (D4) |
| ENDOSULFAN 2 (THIODAN II) | NG/L | 4.0 | 74000. (D4) |
| ENDRIN | NG/L | 4.0 | 200. (A1) |
| ENDOSULFAN SULPHATE (THIODAN SULPHATE) | NG/L | 4.0 | N/A |

| SCAN/PARAMETER | DETECTION | | |
|---------------------|-----------|-------|-------------|
| | UNIT | LIMIT | GUIDELINE |
| HEPTACHLOR EPOXIDE | NG/L | 1.0 | 3000. (A1) |
| HEPTACHLOR | NG/L | 1.0 | 3000. (A1) |
| METOLACHLOR | NG/L | 500. | 50000. (B3) |
| MIREX | NG/L | 5.0 | N/A |
| OXYCHLORDANE | NG/L | 2.0 | N/A |
| O,P-DDT | NG/L | 5.0 | 30000. (A1) |
| PCB | NG/L | 20.0 | 3000. (A2) |
| O,P-DDD | NG/L | 5.0 | N/A |
| PPDDE | NG/L | 1.0 | 30000. (A1) |
| PPDDT | NG/L | 5.0 | 30000. (A1) |
| ATRATONE | NG/L | 50. | N/A |
| ALACHLOR | NG/L | 500. | 35000. (D2) |
| PROMETONE | NG/L | 50. | 52500. (D3) |
| PROPAZINE | NG/L | 50. | 16000. (D2) |
| PROMETRYNE | NG/L | 50. | 1000. (B3) |
| SENCOR (METRIBUZIN) | NG/L | 100. | 80000. (B2) |
| SIMAZINE | NG/L | 50. | 10000. (B3) |

POLYAROMATIC HYDROCARBONS

| | | | |
|-----------------------------|------|------|-------------|
| PHENANTHRENE | NG/L | 10.0 | N/A |
| ANTHRACENE | NG/L | 1.0 | N/A |
| FLUORANTHENE | NG/L | 20.0 | 42000. (D4) |
| PYRENE | NG/L | 20.0 | N/A |
| BENZO(A)ANTHRACENE | NG/L | 20.0 | N/A |
| CHRYSENE | NG/L | 50.0 | N/A |
| DIMETHYL BENZO(A)ANTHRACENE | NG/L | 5.0 | N/A |
| BENZO(E)PYRENE | NG/L | 50.0 | N/A |
| BENZO(B)FLUORANTHENE | NG/L | 10.0 | N/A |
| PERYLENE | NG/L | 10.0 | N/A |
| BENZO(K)FLUORANTHENE | NG/L | 1.0 | N/A |
| BENZO(A)PYRENE | NG/L | 5.0 | 10. (B1) |
| BENZO(G,H,I)PERYLENE | NG/L | 20.0 | N/A |
| DIBENZO(A,H)ANTHRACENE | NG/L | 10.0 | N/A |
| INDENO(1,2,3-C,D)PYRENE | NG/L | 20.0 | N/A |
| BENZO(B)CHRYSENE | NG/L | 2.0 | N/A |
| CORONENE | NG/L | 10.0 | N/A |

SPECIFIC PESTICIDES

| | | | |
|--|------|------|--------------|
| TOXAPHENE | NG/L | N/A | 5000. (A1) |
| 2,4,5-TRICHLOROBUTYRIC ACID (2,4,5-T) | NG/L | 50. | 200000. (B4) |
| 2,4-DICHLOROBUTYRIC ACID (2,4-D) | NG/L | 100. | 100000. (A1) |
| 2,4-DICHLOROPHENOXYBUTYRIC ACID | NG/L | 200. | 18000. (B3) |
| 2,4-D PROPIONIC ACID | NG/L | 100. | N/A |
| DICAMBA | NG/L | 100. | 120000. (B1) |
| PICLORAM | NG/L | 100. | 190000. (B3) |
| SILVEX (2,4,5-TP) | NG/L | 50. | 10000. (A1) |
| DIAZINON | NG/L | 20. | 20000. (B1) |
| DICHLOROVOS | NG/L | 20. | N/A |
| DURSBAN | NG/L | 20. | N/A |
| ETHION | NG/L | 20. | 35000. (G) |
| GUTHION(AZINPHOSMETHYL) | NG/L | N/A | 20000. (B1) |
| MALATHION | NG/L | 20. | 190000. (B1) |
| MEVINPHOS | NG/L | 20. | N/A |
| METHYL PARATHION | NG/L | 50. | 7000. (A1) |
| METHYLTRITHION | NG/L | 20. | N/A |

| SCAN/PARAMETER | DETECTION | | |
|----------------------|-----------|-------|------------------|
| | UNIT | LIMIT | <u>GUIDELINE</u> |
| PARATHION | NG/L | 20. | 50000. (B1) |
| PHORATE (THIMET) | NG/L | 20. | 2000. (B3) |
| RELDAN | NG/L | 20. | N/A |
| RONNEL | NG/L | 20. | N/A |
| AMINOCARB | NG/L | N/A | N/A |
| BENONYL | NG/L | N/A | N/A |
| BUX (METALKAMATE) | NG/L | 2000. | N/A |
| CARBOFURAN | NG/L | 2000. | 90000. (B1) |
| CICP (CHLOROPROPHAM) | NG/L | 2000. | 350000. (G) |
| DIALATE | NG/L | 2000. | 30000. (H) |
| EPTAM | NG/L | 2000. | N/A |
| IPC | NG/L | 2000. | N/A |
| PROPOXUR (BAYGON) | NG/L | 2000. | 90000. (G) |
| SEVIN (CARBARYL) | NG/L | 200. | 90000. (B1) |
| SUTAN (BUTYLATE) | NG/L | 2000. | 245000. (D3) |

VOLATILES

| | | | |
|----------------------------|------|------|------------|
| BENZENE | UG/L | .050 | 5.0 (B1) |
| TOLUENE | UG/L | .050 | 24.0 (B4) |
| ETHYLBENZENE | UG/L | .050 | 2.4 (B4) |
| PARA-XYLENE | UG/L | .100 | 300. (B4) |
| META-XYLENE | UG/L | .100 | 300. (B4) |
| ORTHO-XYLENE | UG/L | .050 | 300. (B4) |
| 1,1-DICHLOROETHYLENE | UG/L | .100 | 7.0 (D1) |
| ETHYLENE DIBROMIDE | UG/L | .05 | .05 G) |
| METHYLENE CHLORIDE | UG/L | .500 | 50. (B1) |
| TRANS-1,2-DICHLOROETHYLENE | UG/L | .100 | 70. (D5) |
| 1,1-DICHLOROETHANE | UG/L | .100 | N/A |
| CHLOROFORM | UG/L | .100 | 350. (A1+) |
| 1,1,1-TRICHLOROETHANE | UG/L | .020 | 200. (D1) |
| 1,2-DICHLOROETHANE | UG/L | .050 | 5.0 (D1) |
| CARBON TETRACHLORIDE | UG/L | .200 | 5.0 (B1) |
| 1,2-DICHLOROPROPANE | UG/L | .050 | 6.0 (D5) |
| TRICHLOROETHYLENE | UG/L | .100 | 50. (B1) |
| DICHLOROBROMOMETHANE | UG/L | .050 | 350. (A1+) |
| 1,1,2-TRICHLOROETHANE | UG/L | .050 | .60 (D4) |
| CHLORODIBROMOMETHANE | UG/L | .100 | 350. (A1+) |
| TETRACHLOROETHYLENE | UG/L | .050 | 10.0 (C2) |
| BROMOFORM | UG/L | .200 | 350. (A1+) |
| 1,1,2,2-TETRACHLOROETHANE | UG/L | .050 | 0.17 (D4) |
| CHLOROBENZENE | UG/L | .100 | 60. (D5) |
| 1,4-DICHLOROBENZENE | UG/L | .100 | 1.0 (B4) |
| 1,3-DICHLOROBENZENE | UG/L | .100 | 130. (G) |
| 1,2-DICHLOROBENZENE | UG/L | .050 | 3.0 (B4) |
| TRIFLUOROCHLOROTOLUENE | UG/L | .100 | N/A |
| TOTAL TRIHALOMETHANES | UG/L | .500 | 350. (A1) |
| STYRENE | UG/L | .05 | 140. (D5) |

